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ABSTRACT

To determine the present status of print and nonprint media use by teachers and students in Kansas schools, a survey questioned 288 elementary and secondary school teachers. Data gathered about teacher media involvement, student media use, and teacher characteristics suggests that high percentages of teachers use professional materials, participate in selection and consult about materials, but that they use electronic nonprint media less widely and frequently. Their students use media widely and frequently for information, but they are less involved in media presentation and preparation. Extent of media use among teachers was apparently related to previous library and audiovisual course work, academic degree attained, years of teaching, teaching level, and subject area. Recommendations are for preservice and inservice media education for teachers, education of school media specialists to supply consultation needed by teachers, increased emphasis on creative student inquiry and flexible scheduling, and continued efforts to attain "media programs that will best aid the schools in implementing their educational goals and instructional programs." (Author/SH)

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MEDIA USE BY KANSAS TEACHERS AND STUDENTS

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Kansas Association of School Librarians
and the
Department of Librarianship
Kansas State Teachers College
Emporia, Kansas
1972

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ALL

MEDIA

ARE

EXTENSIONS

OF

SOME

HUMAN

FACULTY-

PSYCHIC

OR

PHYSICAL.

The Medium is the Massage, Marshall McLuhan and Quentin Fiore

MEDIA USE BY KANSAS TEACHERS AND STUDENTS

A Study by

Marjorie Sullivan

and

Jean Moore

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Kansas Association of School Librarians
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ABSTRACT

Two hundred and eighty-eight elementary and secondary teachers in 45 Kansas schools responded to "Media Use in Teaching and Learning a Preliminary Checklist" to determine incidence and frequency of media utilization. Five "Checklist" items relate to teacher media involvement; four refer to student media use. Responses indicate use almost daily, weekly or bi-weekly, monthly or bi-monthly, during the semester, or never. Data is reported for the whole sample, for six teacher characteristics, and for beginning and experienced teachers. Data reveal that high percentages of teachers use SMC professional materials, participate in selection, consult about materials and use them in the classroom; but they use electronic nonprint media less widely and less frequently. Their students use media widely and frequently for information, but they are less involved in media presentation and preparation. Extent of media use seems to be related to previous library and audiovisual course work, academic degree attained, years of teaching, teaching level, and subject area. Experienced teachers and their students exceed beginning teachers and their students in precentages using media. Recommended are pre- and in-service media education for teachers, with emphasis on weakness as discovered; education of school media specialists to supply consultation needed by teachers; increased emphasis on creative student inquiry and flexible scheduling; and continued efforts to attain the 1969 Standards,[1] which provide resources to support learning by creative inquiry.

Preface

When Mike Printz, librarian at Topeka West High School, became president of the Kansas Association of School Librarians in 1970, he created the Teacher-Education Committee to study teacher training for media use in Kansas schools. His successor, Mrs. Rubye P. Downs, coordinator of school libraries in the Salina public schools, continued the committee the following year. Two immediate influences prompted the creation of this committee: realization by Kansas school librarians that teacher media orientation and competencies would determine to a considerable extent the success or failure of school library media centers and informal requests from educators urging school librarians to assume an active role in defining and developing teacher media competencies.

By 1970 numerous Kansas schools had reached or surpassed the 1960 Standards for School Library Programs (2) and were referring to the 1969 Standards for School Media Programs (1) for guidance in developing resources and services. In these schools library media centers were at least minimumly adequate to support the curriculum. At this point in time school librarians realized that to a large degree the success or failure of the media program would be determined by the classroom teacher. For years school librarians had encouraged teacher-student involvement with media. Now that media resources and services at adequate levels were available, teacher commitment to mediated learning was crucial.

This study pictures the status of media use by teachers and students in selected Kansas schools, provides an instrument for determining frequency of media use by teachers and learners, and reveals some relationships between teacher background and media use by teachers and students use.

Kansas school librarians and school library media coordinators contributed to the making of "Media Use in Teaching and Learning: a Preliminary Checklist." Miss Barbara Herrin, Librarian at Thomas W. Butcher Children's School, Kansas State Teachers College, arranged for field testing this measuring device; and Dr. Virginia Ponder, Associate Professor, Division of Education and Psychology, Kansas State Teachers College, suggested important revisions. Without the cooperation of district level administrators, classroom teachers and their school principals, this study would have been impossible. We thank especially the teachers in the schools listed below.*

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Manhattan Riley UNFD #383: (e) Bluemonte, (e) Eugene Field, (e) Lee, (jh) Manhattan, (sh) Manhattan, (e) Marlots, (e) Northview, (e) Ogden, (e) Strong, (e) Theodore Roosevelt, (e) Woodrow Wilson.

Salina Saline UNFD #305: (jh) Roosevelt Lincoln, (sh) Salina Central.

Great Bend Barton UNFD #428: (e) Bissell Point, (sh) Great Bend, (jh) Harrison, (e) Jefferson, (e) Lincoln, (e) Park, (jh) Roosevelt, (e) Washington.

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25. Teacher and Student Media Use of Six Electronic Nonprint Media in Presentations: Comparisons of Beginning and Experienced Teacher and Their Respective Students.

I. THE BACKGROUND

The Problem

Marking a pathway, the 1960 Standards propose library services which permeate the whole educational process.

> The true concept of a school library program means instruction, service, and activity throughout the school rather than merely within the four walls of the library quarters. (2, 14)

If library media services are to pervade school activities, teachers must be library media oriented. Anticipating the teacher's emerging role, the 1960 Standards (2) also provide a brief listing of essentials to guide directors of teacher-education programs.

1. Require the prospective teacher to take courses dealing with printed and audiovisual materials for children or young people.
2. Make certain that relevant material about and references to school library services, resources, and facilities are incorporated in courses in school administration, supervision, curriculum, instructional methods, guidance and other areas.
3. Provide a comprehensive and functional collection of children's books, books for young people, films, filmstrips, recordings, textbooks, and other materials appropriate for youth.
4. Make arrangements so that the use of the services and resources of an excellent school library is a natural part of the prospective teacher's practice teaching. (2, 67)

The 1969 Standards are guidelines for unified services "for media programs that will best aid the schools in implementing their educational goals and instructional programs." (1, x) To this end, these Standards list essential elements of the media program intended to support teaching and learning.

> Consultant services to improve learning, instruction, and the use of media resources and facilities.
>
> Instruction to improve learning through the use of printed and audiovisual resources.
>
> Information on new educational developments.
>
> New materials created and produced to suit special needs of students and teachers.
>
> Materials for class instruction and individual investigation and exploration.
>
> Efficient working areas for students, faculty and media staff.
>
> Equipment to convey materials to the student and teacher. (1, 4)

The 1969 Standards also describe the teacher's critical role relative to this program of services.

> The most effective media program depends upon the support of the school principal and upon an ongoing partnership between teachers and media specialists. Teachers, as members of this team, keep media specialists informed about curricular content and assignments. Teachers are also involved in planning media instruction, evaluating resources, motivating the use of the media center, and implementing the media program. (1, 4)

If media programs are to implement educational purposes, teachers must alter their professional behavior. When Standards for School Media Programs was published in 1969, Henry M. Brikell grasped their revolutionary import. Addressing the Institute for State Media Personnel at Western Michigan University, Brikell stated that the intent was to substitute media for teachers as presenters of information.

> "You intend some new kind of relationship between the students and the media center, between the media specialist and the faculty. This is a deep intervention, a change." (3, 18)

Such a radical change, Brikell asserted, requires teacher education for a new role. (3, 19)

The 1969 Standards vest responsibility for in-service teacher education jointly, with both the building-level librarian (1, 9) and the district director. (1, 53) Each is also responsible for a professional collection to contribute to the teacher's continuing education. (1, 33)

The Research

Concern about the teacher's library knowledge and skill is not new. In 1913 the United States Bureau of the Census sent a questionnaire about library instruction to 284 normal schools. Data from the 160 replies were published the following year in Library Instruction in Universities, Colleges, and Normal Schools. Henry R. Evans, the compiler, commented: "A more or less superficial acquaintance with the book arts may suffice for the average college and high school student, but something more is required in the case of the normal school student." (18, 17)

As school libraries developed in the Sixties, stimulated by Standards for School Library Programs (1), attention focused sharply on teacher media proficiency. In 1963 Paul W. F. Witt defined teacher media competencies (21) and Virginia McJenkin proposed content and guidelines for "grass roots" in-service

programs in media use for teachers. (12) In 1964 Witt addressed an American Association of School Librarians Membership meeting to discuss the barriers to achieving media competencies in teacher-training programs and to suggest some solutions. (20)

These statements of what ought to be were followed by surveys of reality. In 1965 Ralph Perkins surveyed 4,170 college seniors enrolled in directed teaching in sixty-nine colleges and universities in thirty-eight states to determine their knowledge of library fundamentals. Concluding his research, Perkins wrote that "the greatest source for potential education for today's youth, the library, is being wasted." (14, 199)

In 1967 Jerry L. Walker, field worker for the Knapp Project, determined that the student teachers he surveyed had only minimal knowledge of print or nonprint media or about the roles of libraries and librarians in the educational process. Walker declared that these student teachers were ill-prepared to teach in tomorrow's schools. To remedy this lack of expertise, Walker recommended specific content for prospective and in-service teachers. (19, 9)

A six-year study by Eleanor P. Godfrey, also published in 1967, appraised the current state of audiovisual technology in the nation by gathering baseline data from 2,927 school district administrators and further information from 238 districts in three surveys at two-year intervals. Godfrey contends that

school system personnel at all levels must assume a vital role in the audiovisual program if technology is to be integrated into the instructional process. She underlines the crucial role of the teacher.

> But the critical element in the equation is the teacher himself. Our educational system, as our society, places a high value on individual autonomy. Unless the teacher finds the new technology compatible with his instructional philosophy, it will not join him and the book as a full partner in the instructional process. (10, 75)

Midway in the Sixties, Phil C. Lange surveyed research dealing with the use of media in the secondary school and assumed the prophet's role:

> In the opinion of this reviewer the present picture is very clear: the discipline-oriented curriculum renovations are changing the status of instructional materials (making them central to learning through exploratory activities) and their accessibility (giving more control to the learner). (10, 44)

Lange also referred to resources to assist the instructor as he accommodates to this major thrust in education:

> In reviewing the resources which are available to the teacher for attacking effectively the teaching problems, Ralph Tyler lists: (a) more adequate knowledge of how learning takes place, (b) devices for aiding teaching and learning, and (c) the most important resources, the teacher himself. (11, 47)

These resources lie at the core of the present study of teacher-student use of media.

Most recent and comprehensive is the 1970 report of the Commission on Educational Technology, To Improve Learning. (17) Reception of this report ranged from Marshall McLuhen's "...belongs to the age of mechanical industry and; indeed,

of the horse collar, as witness page 7 where it speaks of 'harnessing technology to the work of schools and colleges'" (9, 307) to Donald P. Ely's, "This is a delightful smorgasboard." (9, 308) To Improve Learning reports actual performance and cites potential contributions of instructional technology. The paucity of present-day educational applications is documented. Proposed are National Institutes of Education, a National Institute of Instructional Technology, production and distribution of quality materials, demonstration projects, and the training of personnel. Ely declares that "this report may well be the document that sounds the death knell of the old audiovisual movement and heralds the new era of instructional technology." (9, 310, 311)

II. THE PURPOSE

Questions

In a large sense, teacher education for media use is a concern shared by all educators, including school librarians. The concern of the Kansas Association of School Librarians and the Teacher-Education Committee led to the question which prompted this study: What is the present status of media use by teachers and students in Kansas schools?

This broad question generated a series of less general queries.

To what extent and with what frequency do teachers use the SMC professional collection?

To what extent and with what frequency are teachers involved in materials selection?

How widely and how frequently do teachers consult with the school media specialist concerning materials for instructional units?

How widely and how frequently do teachers use SMC materials to arouse interest and convey information in their classrooms?

How do the extent and frequency of teacher use of conventional nonprint and electronic nonprint media compare?

With what frequency do students most often visit the SMC during class periods--singly, in small groups, or as classes?

To find information, what medium do students consult most widely and how frequently? least widely and how frequently?

To present information in class, how extensively do students use media? Which electronic medium do students use most widely and how frequently?

To what extent do students prepare materials, conventional nonprint and electronic nonprint?

To what extent do teacher characteristics--library or audiovisual hours, degrees earned, years of teaching, grade level, and subject area--relate to media use?

To what extent do beginning and experienced teachers and their respective students use media?

Definitions

beginning teacher - one having taught less than one semester but more than three months.

conventional nonprint media - traditionally used teaching materials, nonprint and non-electronic, such as drawings, paintings, posters, collages, sculpture, as well as models and realia.

electronic nonprint media - newer media, involving electricity, such as 16mm films and tape recordings.

experienced teacher - one having taught three or more years.

media - print and nonprint carriers of information, such as pamphlets and video tapes.

nonprint media - carriers of communication using means other than print; for example, sound recordings or globes.

school librarian - a school media specialist

school media specialist - a school librarian

selection - choosing media for the collection after considering criteria of quality and use.

Theories

This study of teacher-student use of media rests on the theoretical bases created by Jerome S. Bruner (4, 5) and Kenneth I. Taylor (16) and embodied in the 1969 Standards. (1)

Bruner sees the teacher as the principal aid in the teaching process. A communicator and a model, the teacher is supported by the wide use of a variety of devices that expand experience, clarify it, and give it personal meaning. For Bruner the act of learning consists of acquisition of new information, transformation to shape new forms, and evaluation to check adequacy of manipulation. Students are assisted by devices for vicarious experience, models, dramatization and automatizing. (5, 31) Bruner also writes about the five great humanizers: language, social organization, management of man's prolonged childhood, the urge to explain and tool making--tools which represent an extension of human powers. (4, 88) In the SMC the learner may produce his own learning tools to embody his discoveries.

Taylor perceives the basic function of the SMC program to be the support of school-wide independent and group inquiry. Creative inquiry requires the transmitting of traditional knowledge and techniques and relating this information to personal experience to form a unique product. Essential are large group instruction, reflection, sharing with peers and with experts. Flexibility, varied and comprehensive collections, and facilities and services to support media production so that the student may present his original ideas in some communicable form are required elements of the SMC program. (16, 289-294)

The AALS-DAVI Standards (1) describe the services of the media program in the school and note the requirements for the staff, resources, and facilities needed to implement the program effectively. The chief purpose of the described media program is to aid schools in implementing their educational goals and instructional programs. (1, x) The 1969 revision responds to significant social changes, educational developments, and technological innovations. (1, ix) In effect, the 1969 Standards (1) supply the guidelines needed to actualize current educational theory espousing student inquiry.

III. THE METHOD

Samples

Two hundred and eighty-eight elementary and secondary teachers in forty-five Kansas schools (Figure 1) supplied data in response to a checklist. All of these schools met three criteria:

1. Each had a school media center meeting or surpassing the 1960 Standards. (2)
2. Each was supervised by a district school library coordinator.
3. The district school library coordinator or a designated school media specialist had agreed to cooperate in this study.

City	Elementary	Junior High	Senior High	Totals
Great Bend	5	2	1	8
Manhattan	9	1	1	11
Salina		1	1	2
Shawnee Mission	22	1	1	24
Totals	36	5	4	45

Figure 1: The School Systems Participating

Twenty-six of these schools met another qualification: each had one or more beginning teachers starting their professional careers in the fall of 1970. Sixty-seven teachers in Great Bend, Manhattan, Salina, and Shawnee Mission systems were questioned in December, 1971, at a point in their teaching careers when they would have become oriented but would not yet have become experienced. Data from these beginners should reflect to some extent their pre-service training for media use. The second sampling, in April, 1971, surveyed 220 Shawnee Mission teachers with three or more years of teaching. These teachers served in schools representing a cross section of socio-economic and grade levels. Their response should reflect teacher-student media use in classrooms guided by established professionals.

The 228 teachers from forty-five schools in four unified districts are part of a larger but undetermined population. The authors of this study have discovered no definitive list identifying all of the schools meeting or exceeding the chosen criteria. A report from the School Library Manpower Project listing eighteen schools in six unified districts meeting the Criteria of Excellence (6, 43-46) to participate in the Task Analysis Survey (7, 18, 19) provides evidence, however, that this larger population does exist. (The requirements of the Criteria equal or exceed those of the 1960 Standards. [2])

The Instrument

The survey instrument was provided by a variety of educators--media specialists, library media directors, and classroom teachers from the elementary through the graduate level. "Media Use in Teaching and Learning: a Preliminary Checklist" (appended) first (1-5) established certain teacher characteristics:

Library education hours

undergraduate graduate

Audiovisual courses

undergraduate graduate

Highest degree

Years of teaching

Present teaching level

Teaching area(s)

The checklist devoted items 1-5 to Teacher Use of Print and Nonprint Media. Responses indicated frequency of use: almost daily, weekly or bi-weekly, monthly or bi-monthly, during each semester, or never. Teachers reported their use of the following:

-professional literature

-consultative service

-participation in selection

-classroom use of media

-ten nonprint media

Teachers then reported frequency of student use of print and nonprint media, items 6-9:

-School Media Center visits during class periods singly, in small groups, as a class

-fourteen print and nonprint media for information

-ten electronic media in presentations

-production of ten nonprint media

The Procedure

The checklist was distributed to three district school library media coordinators and to one designated school librarian who had agreed to supervise its administration. All copies administered were returned for processing and interpretation. The Bureau of Measurements, Kansas State Teachers College, coded the responses on machine readable cards to yield print-outs of frequency data on the entire sample, on teachers with each designated characteristic, and on beginning teachers. Frequency tallies were converted to percentages to reconcile variations in the numbers of responses and to facilitate comparison. Analyses revealed (1) breadth of use, i.e., the percentage of teachers reporting use with some degree of frequency, (2) non-use, i.e., the percentage designating never, and (3) frequency of use, i.e., percentages reflecting a cluster of responses in a tally box. In some instances multiple responses items have been averaged to provide a general estimate. Line and bar graphs facilitate comparisons.

The Limitations

The checklist assumes that frequency of use is a valid indicator of teacher and student media involvement. Certain

limitations are inherent in this instrument and its proposed use:

As a measure, frequency of use does not indicate appropriateness of the chosen medium nor the effectiveness of its use.

As a measure, frequency of use assumes that each medium should be accorded equal use, regardless of differences in students, subjects, or teachers.

Unequal availability of media--the meeting of 1960 Standards (2) sets a floor but no ceiling--could affect frequency of use as measured by the checklist.

Omissions and inaccuracies in teacher responses could detract from the value of the data.

Sampling all school systems with qualifying school libraries could afford more representative data.

The Significance

If educational programs in elementary and secondary schools are to attain excellence, one essential will be SMC's to sustain creative student inquiry. Realization of the 1969 Standards (1) and the educational excellence they support requires optimum teacher-student media use. The teacher's role in media utilization is crucial. As more school media centers meet 1960 Standards (2) and reach for levels described in the 1969 Standards (1), attention focuses on the education of teachers for media use. Presently educators are defining essential teacher media competencies, designing pre-

and in-service programs to develop these capabilities, and devising means of evaluating progress. Status studies are useful to indicate present needs and mark the point of departure, so to speak, for future improvement in teacher media use.

It is important that status studies of teacher-student media use occur in schools and school districts, even in the states and the nation. Findings of such investigations should contribute to program planning and to evaluation. The present investigation initiates such a study of teacher-student media use in selected Kansas schools and provides an instrument for further research.

IV. THE DATA ANALYZED

As recorded in Figure 2, sixty-one of the 288 teachers questioned have undergraduate library hours and nine have graduate library hours. One hundred have undergraduate audiovisual hours and fifty have graduate audiovisual hours. One hundred and eighty-eight hold Master's degrees and five hold Specialist's degrees. Years of teaching run the gamut: 0-5 (145); 6-10 (75); 11-15 (22); 16-20 (20); and 20+ (25). All elementary and secondary levels are represented: K (20); 1-3 (93); 4-6 (85); 7-9 (24); and 10-12 (56). Teaching areas are also sampled: language-literature (32); fine arts (9); social studies (19); science-math (27); and practical arts (24). Sixty-seven beginning teachers are also examined.

Library Hours	
Undergraduate	61
Graduate	9
Audiovisual Hours	
Undergraduate	100
Graduate	50
Highest degree	
Bachelor's	187
Master's	89
Specialist	5
Doctor's	0

Years of teaching	
0-5	145
6-10	72
11-15	22
16-20	20
20+	25
Teaching level	
K	20
1-3	93
4-6	85
7-9	24
10-12	56

Teaching area or field	
Language - literature	32
Fine arts	9
Social Studies	19
Science - math	27
Practical arts	24

Figure 2. The Teachers Surveyed: Educational Backgrounds, Teaching Experience, Levels, and Fields

projections, eighty percent of tape recordings, and seventy-four percent of disc recordings. Sixty-six percent of the responding teachers use opaque projections; sixty-four percent use slides. Forty percent replied that they use television and videotape. Twenty percent use televised presentations during the semester; seventeen percent use video-tapes during the semester.

Student use of print and nonprint media.

Teachers indicated that their classes visited the SMC most often weekly or bi-weekly (65%) (Figure 6). Seventeen percent, however, indicated that their classes never visit the school media center. Seventy-five percent reported media center visits by small groups, with some degree of frequency. Sixty-seven percent marked single visits almost daily or weekly, bi-weekly. Only twelve percent designated never for single visits.

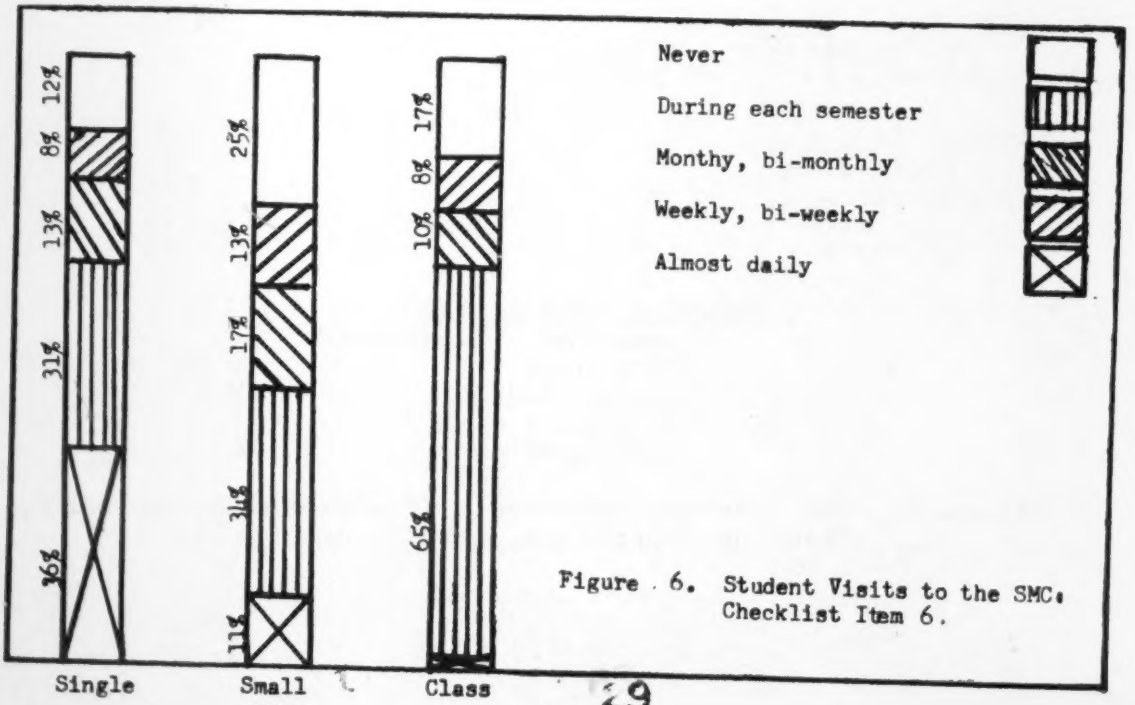

Figure 6. Student Visits to the SMC, Checklist Item 6.

Student Use of Print and Nonprint Media	Almost Daily	Weekly or Bi-weekly	Monthly or Bi-monthly	During each Semester	Never	
6.0 During class periods my students visit the School Media Center. Students visit:						6.0
a. singly	88	76	32	19	29	a
b. in small groups	25	78	41	30	57	b
c. as a class	4	166	25	21	41	c
7.0 My students seek information in print and nonprint media to answer their problems. They use:						7.0
a. textbooks	174	45	15	14	25	a
b. magazines and newspapers	50	103	50	26	36	b
c. pamphlets	27	60	67	51	47	c
d. posters, photos, study prints (any or all)	35	71	64	44	37	d
e. 16mm film	4	46	51	42	97	e
f. 8mm or Super 8 film	4	26	35	47	130	f
g. filmstrips or slides	13	71	73	42	64	g
h. loop films	3	30	35	59	111	h
i. educational games	42	54	41	52	62	i
j. transparencies	11	54	57	54	76	j
k. tape recordings	10	30	55	69	84	k
l. disc recordings	10	34	46	49	100	l
m. video tapes	4	10	22	38	166	m
n. televised or radioed material	7	10	22	45	139	n
8.0 My students use a variety of nonprint media in class presentations. They use:						8.0
a. filmstrips	9	50	44	44	113	a
b. slides	5	16	36	51	143	b
c. transparencies	7	29	50	44	121	c
d. opaque projections	3	19	30	43	149	d
e. disc recordings	3	22	45	41	137	e
f. tape recordings	6	21	38	66	119	f
9.0 My students prepare for their use materials for teaching and learning. They prepare:						9.0
a. drawings, paintings, posters, collage, sculpture (any or all)	49	97	58	30	33	a
b. transparencies	3	14	34	37	163	b
c. slides	1	1	14	37	195	c
d. 8mm or Super 8 film	0	1	6	21	213	d
e. audio tapes	4	8	22	50	160	e
f. video tapes	0	0	2	27	211	f

All Respondents and Media Use

Teacher use of print and nonprint media (Figure 4). Eighty-six percent of the responding teachers use with some frequency professional materials circulated by the school media center. Thirty-three percent check out and read these materials monthly or bi-monthly. Seventy-four percent of those responding are involved in selection, forty-two percent during each semester. Ninety-two percent of the teachers answering consult with the media specialist concerning materials and services related to instructional units. Sixty-nine percent of those consulting do so weekly, bi-weekly or monthly, bi-monthly.

Ninety-seven percent of the teachers replied that they use media center materials to arouse interest and convey knowledge in their classrooms. Thirty-nine percent use such materials weekly or bi-weekly.

Teacher use of ten nonprint media (Figure 5) ranges from ninety-three to forty percent, depending on the medium in question. On the average, seventy-two percent use media with some frequency. Ninety-three percent of the teachers indicated use of filmstrips, forty-one percent using them weekly or bi-weekly. Ninety percent use 16 mm films with some frequency; ninety percent also use models, maps, and realia. These non-electronic media are most frequently used almost daily and weekly, bi-weekly (52%). Eighty-three percent of those answering indicated use of overhead

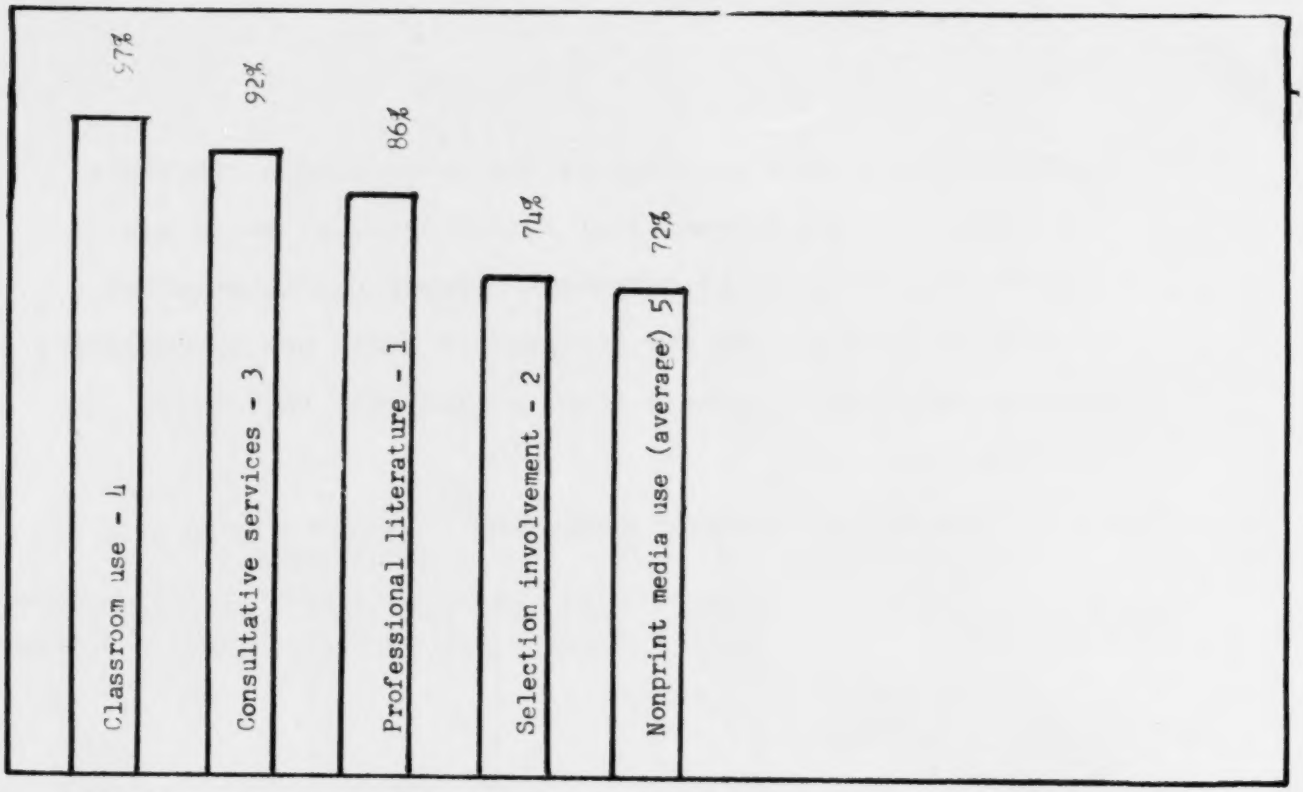

Figure 4. Teacher Use of Print and Nonprint Media, with Various Frequencies
Checklist Items 1-5

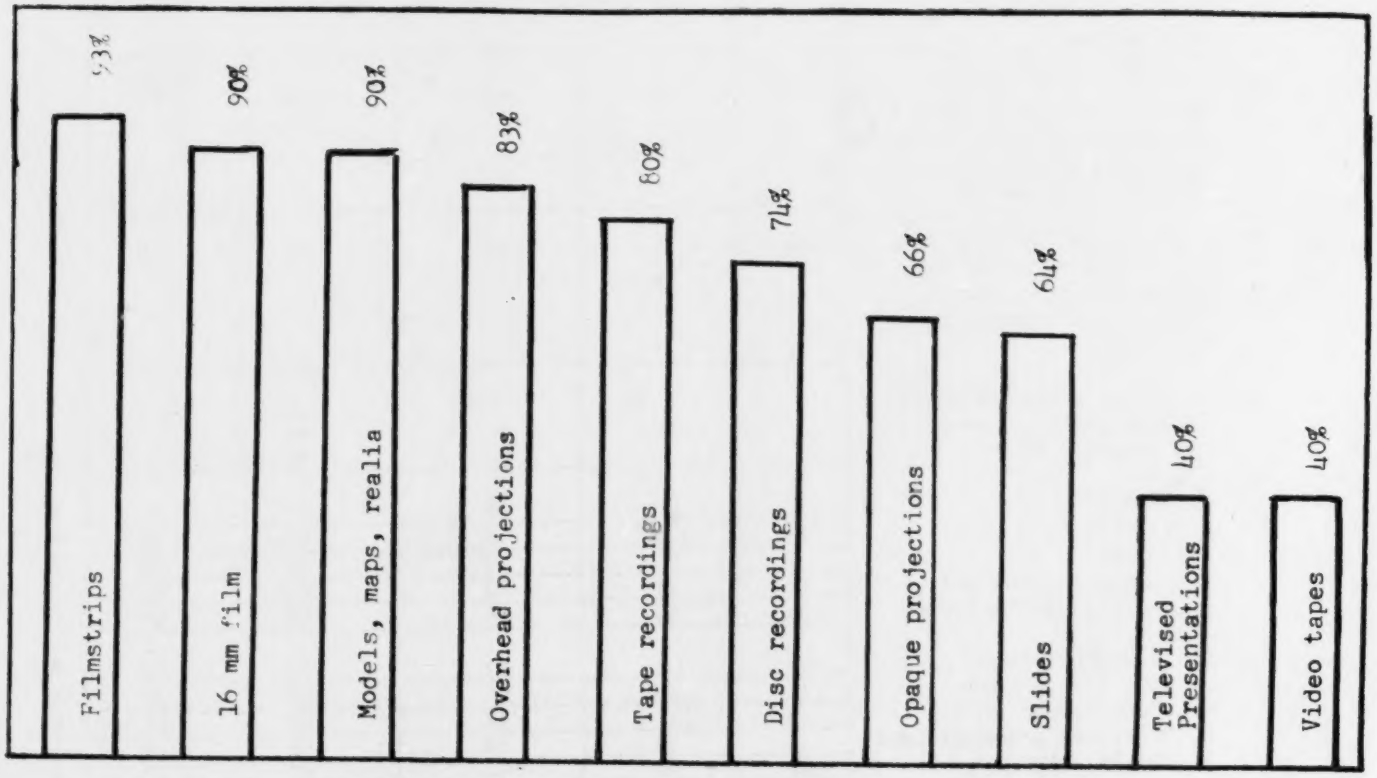

Figure 5. Teacher Use of Nonprint Media in Presentations, with Various Frequencies.
Checklist Item 5

Analysis of the data supplied by the whole sample discloses the extent and the frequency of teacher-student media use (Figure 3). Analysis of pertinent teacher characteristics as related to media use and analysis of media use by beginning teachers and their students focus exclusively on extent, ignoring frequency.

Figure 3. Teacher and Student Media Use: Frequency Data From All Respondents

Teacher Use of Print and Nonprint Media	Almost Daily	Weekly or Bi-weekly	Monthly or Bi-monthly	During each Semester	Never	
1. I check out and read professional literature available in the School Media Center.	5	64	99	75	41	1
2. I am involved with the school media specialist in the selection of materials for the collection.	9	35	45	119	75	2
3. I consult with the school media specialist concerning materials and services related to instructional units.	8	94	101	58	23	3
4. I use materials from the School Media Center to arouse interest and convey knowledge in my classroom.	69	112	66	29	9	4
5.0 In class presentations I utilize one or more of the nonprint media. I use:						5.0
a. 16mm film	8	79	94	49	26	a
b. filmstrips	19	114	82	42	18	b
c. slides	7	24	53	60	99	c
d. opaque projections	16	17	61	64	94	d
e. overhead projections	34	64	66	58	46	e
f. tape recordings	20	41	67	73	56	f
g. disc recordings	16	60	66	47	71	g
h. video-tapes	3	17	32	45	147	h
i. televised presentations	3	13	19	54	153	i
j. models, maps, realia	62	81	50	52	28	j

Sixty-four percent of the teacher replies pointed to daily student use of textbooks (Figure 7). Only nine percent indicated that their students never use texts as information sources. Thirty-nine percent of the students use magazines and newspapers weekly or bi-weekly and eighty percent use them with some degree of frequency. Eighty-five percent reported student use of pamphlets and also of posters, photos, and study prints. Similar percentages were indicated for student use of filmstrips and slides (75%), educational games (75%), loop films (72%), and transparencies (70%). Declining percentages of students use tape recordings (66%), 16 mm film (60%), disc recordings (58%), 8 mm or Super 8 (47%), television or radio (40%), and video tape (31%), all with various degrees of frequency.

Student use of media in class presentations, with varying degrees of frequency, is revealed by these percentages: filmstrips (59%), tape recordings (52%), transparencies (56%), disc recordings (44%), slides (43%), and opaque projections (39%).

Student preparation of media falls heavily in the item listing nonelectronic materials--drawings, paintings, posters, collage, and sculpture: almost daily 49%; weekly, bi-weekly 39%; monthly, bi-monthly 22%, during each semester 11%; and never 12%. Student preparation of electronic media, with some degree of frequency, is indicated by the following: transparencies (35%), audio tapes (35%), slides (21%), video tape (17%), and 8 mm or Super 8 (16%).

Figure 7. Student Use of Print and Nonprint Sources of Information, with Various Frequencies Checklist Item 7.

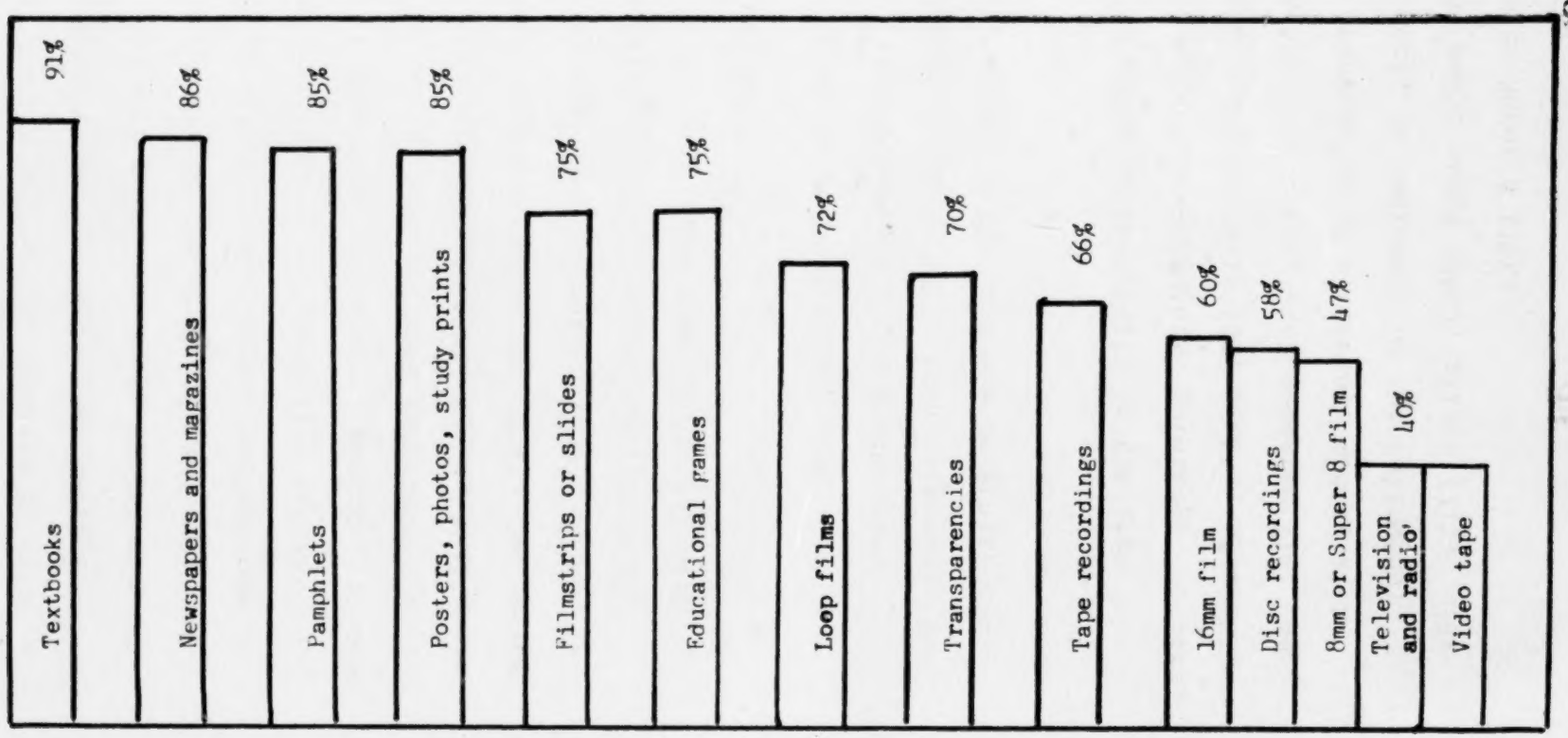

Figure 8. Teacher Characteristics and Percentages of Teachers and Students Using Media

	Course work				Highest degree			Years of Teaching					Teaching level					Teaching areas				
	Undergraduate Library	Graduate Library	Undergraduate Audiovisual	Graduate Audiovisual	Bachelor'	Master's	Specialist's	0-5	6-10	11-15	16-20	20+	Kindergarten	1-3	4-6	7-9	10-12	Language Arts	Fine Arts	Social Science	Science-Math	Practical Arts
1. Professional literature	98	100	92	90	85	89	100	89	85	91	100	96	95	85	95	71	73	81	78	90	78	67
2. Materials selection	80	67	82	88	70	82	100	69	82	68	85	80	53	70	86	71	70	81	78	84	74	58
3. Materials consultation	100	89	94	98	91	93	100	89	94	96	100	96	95	97	98	83	79	100	67	79	89	71
4. Material use in the classroom	100	100	100	100	96	98	100	95	99	96	100	100	100	99	100	88	91	97	89	100	85	86
5. Presentation with nonprint media	79	66	72	86	70	80	88	68	81	90	77	81	70	73	81	59	71	77	69	69	65	58
a. 16 mm film	95	100	94	96	88	96	100	85	96	96	95	100	84	91	97	79	86	84	100	90	74	92
b. filmstrips	97	100	95	98	93	94	100	91	97	91	95	100	95	100	100	97	79	88	89	63	82	75
c. slides	72	80	70	80	62	72	80	58	68	64	80	92	37	61	77	54	70	72	67	63	56	54
d. opaque projections	80	50	70	80	64	71	100	59	76	64	65	92	42	47	81	42	59	56	56	84	67	54
e. overhead projections	84	89	88	83	83	84	80	77	89	86	95	95	84	86	94	63	71	75	56	90	85	67
f. tape recordings	84	89	77	96	77	89	80	72	90	86	85	85	90	82	85	63	75	91	78	79	74	46
g. disc recordings	79	79	75	88	73	79	80	72	79	82	60	60	68	71	86	63	71	91	100	42	44	50
h. video-tapes	44	34	47	72	36	64	60	35	61	55	65	65	42	51	41	17	71	63	44	42	44	54
i. televised presentation	56	34	43	68	67	58	80	34	60	64	40	40	63	47	45	13	57	53	33	42	44	25
j. models, maps, realia	97	100	93	94	90	90	100	88	93	91	85	85	90	93	99	92	71	94	67	95	78	63
6. SMC visits	91	81	87	92	88	85	93	84	86	77	88	90	61	90	99	79	70	85	74	82	73	75
a. singly	97	89	91	96	88	93	80	88	90	91	90	96	53	88	99	91	91	97	78	100	82	92
b. in small groups	85	67	84	92	79	82	100	78	82	73	80	92	47	75	98	75	75	84	78	79	70	75
c. as a class	93	89	88	88	88	80	100	85	86	68	95	92	84	96	99	71	54	75	67	67	63	58

7. Information from media	78	79	72	85	64	74	83	64	71	75	81	85	65	65	80	63	72	76	60	65	67	62	
a. textbooks	98	100	95	88	90	92	100	92	94	91	75	96	68	89	99	92	91	97	33	67	96	83	
b. magazines and newspapers	97	89	93	94	84	93	100	85	93	91	80	88	79	81	98	88	74	94	78	78	70	88	
c. pamphlets	95	89	89	96	77	96	100	76	94	91	85	88	68	75	95	79	86	88	67	67	78	88	
d. posters, photos, study prints (any or all)	93	100	92	96	85	90	100	83	92	91	85	92	90	84	97	88	77	84	78	78	82	75	
e. 16 mm film	79	79	64	98	59	76	80	54	79	73	70	88	58	56	75	58	71	72	44	44	59	67	
f. 8 mm or Super 8 film	61	79	58	84	47	66	80	42	68	8	65	80	58	43	67	42	55	59	56	56	52	46	
g. filmstrips or slides	90	89	82	62	33	59	80	71	86	77	80	88	63	70	93	79	70	88	56	56	67	71	
h. loop films	64	56	63	90	57	76	100	49	74	50	75	88	58	59	75	33	54	44	44	53	63	46	
i. educational games	87	67	77	76	78	81	80	76	76	82	80	84	84	86	85	58	61	72	44	74	70	50	
j. transparencies	80	89	76	86	69	83	100	65	80	73	90	88	63	62	91	54	75	72	44	79	74	75	
k. tape recordings	75	79	69	90	64	76	80	63	79	59	85	96	58	62	84	67	82	91	89	84	63	46	
l. disc recordings	74	79	67	92	60	61	80	58	72	64	75	80	47	57	78	67	64	91	100	79	44	42	
m. video tapes	94	45	39	80	15	70	60	32	35	41	60	68	42	33	37	29	70	59	44	37	41	63	
n. televised or radioed material	61	67	47	62	43		60	43	54	68	65	64	68	47	48	42	61	75	56	53	84	25	
8. Presentation with media	64	52	57	74	50	62	63	48	59	55	52	80	49	43	74	38	51	57	67	55	46	51	
a. filmstrips	67	67	65	74	57	65	80	56	63	59	55	84	53	46	84	50	54	63	56	58	52	63	
b. slides	61	34	51	68	44	60	60	42	53	50	50	80	42	38	67	29	52	47	56	42	37	54	
c. transparencies	67	67	59	82	52	66	60	49	65	59	50	88	53	46	79	46	50	53	44	63	67	54	
d. opaque projections	56	37	48	68	44	55	60	41	56	36	50	76	42	39	70	29	41	44	44	53	44	38	
e. disc recordings	62	56	57	70	46	64	60	47	54	64	50	72	47	41	68	38	54	69	67	53	30	46	
f. tape recordings	69	56	63	80	56	64	60	55	60	59	55	80	58	37	78	38	57	63	58	63	44	50	
9. Preparation of media	51	43	44	60	41	53	67	37	30	40	39	68	51	42	48	33	41	46	50	36	29	38	
a. drawings, paintings, posters, collage, sculpture (any or all)	98	100	93	92	89	85	100	48	90	91	75	96	74	93	99	92	68	94	67	84	70	71	
b. transparencies	49	45	41	66	40	47	60	34	56	41	35	68	32	38	59	38	34	41	44	42	44	33	
c. slides	34	22	31	42	28	38	60	24	38	27	30	64	32	30	31	21	38	34	44	32	19	33	
d. 8 mm or Super 8 film	31	22	28	32	23	28	60	17	34	23	25	56	37	24	26	13	25	19	44	16	11	25	
e. audio tapes	61	45	45	62	40	51	60	38	53	36	40	64	47	42	46	25	39	53	56	26	19	33	
f. video tapes	34	22	28	66	25	71	60	19	31	23	30	60	37	25	27	8	39	34	44	16	11	33	

Teacher Characteristics and Media Use

Figure 8 records pertinent teacher characteristics--twenty-four variables in all--and corresponding percentages of teacher and student media use. The analysis of data which ensues focuses on the extent of media use as expressed in percentages. Frequency of use is ignored to concentrate on the percentages of teachers and students who do and do not use the various media.

Teachers with library hours

The sixty-one teachers with undergraduate hours in library science use the professional collection (98%), participate in selection (80%), consult concerning materials (100%) and utilize materials in their classroom (100%). They use widely filmstrips (97%), models, maps and realia (97%) and 16mm film (95%). Least widely they use television (56%) and video tape (44%). On the average, seventy-nine percent use the ten listed nonprint media in presentations. Teachers with undergraduate library hours recorded student visits to the IMC during class periods (91%): singly, 96%; in small groups, 85%; and as a class, 93%. On the average seventy-eight percent of their students resort to media for information. Most widely used are textbooks (98%), periodicals (97%), pamphlets (95%), posters, photos, study prints (93%), and filmstrips or slides (90%). Less widely used are educational games (87%), transparencies (80%) and tape (75%) and disc (74%)

recordings. Least used are 8 mm or Super 8 film (61%), television or radio (61%), and video tapes (44%). On the average sixty-four percent of their students employ nonprint media in presentations. Most widely used are the tape recordings (69%); filmstrips (67%), and transparencies (67%). On the average, fifty-one percent prepare the six listed media. Overwhelmingly favored are drawings, paintings, posters, collage, sculpture (98%), with transparencies (49%) ranking second.

The ten respondents with graduate library science hours use widely the professional collection (100%) and materials for their classrooms (100%). Less widely they use consultative services (89%) and participate in selection (67%). One hundred percent use 16 mm films, filmstrips, and models, maps, and realia. On the average, sixty-six percent use the ten nonprint items listed in presentations. Teachers with graduate library hours reported student visits during class periods to the SMC (81%): singly, 89%; in small groups, 67%; and as a class, 89%. For information their students consult the listed print and nonprint media (79%). They use most widely textbooks (100%), posters, photos, study prints (100%), periodicals (89%), pamphlets (89%), and filmstrips or slides (89%). They use least widely loop films (56%) and video tapes (45%). On the average fifty-two percent of their students use the electronic nonprint media listed in presentations, with filmstrips (67%) and transparencies (67%) most widely employed. On the average forty-three percent prepare the six

listed nonprint media, with drawings, paintings, posters, collage, sculpture (100%) most widely produced and transparencies (45%) lagging as a poor second.

Teachers with audiovisual hours

The one hundred responding teachers with undergraduate audiovisual hours use widely the professional collection (92%), participate in selection (82%), consult concerning materials (94%), and use SMC materials in their classrooms (100%). These teachers use widely nonprint media in presentations: filmstrips, 95%; 16 mm films 94%; and models, maps, realia, 93%. Least widely they use video tapes (47%) and television (43%). On the average seventy-two percent of these teachers use the ten nonprint media listed in presentations.

Eighty-seven percent of the responding teachers with undergraduate audio-visual course work indicated student visits to the SMC during class periods: singly, 91%; in small groups, 84%; and as a class 88%. Seventy-two percent of their students, on the average, use print and nonprint media for information: textbooks (95%), magazines and newspapers (93%), posters, photos, study prints (92%), and pamphlets (89%). Their students use least widely television or radio (47%) and video tapes (39%). On the average, fifty-seven percent of their students use the six listed electronic nonprint items in presentations. Filmstrips (65%) and tape recordings (63%) are most widely used. On the average, forty-four percent produce the six nonprint media items, with drawings, paintings, collage, sculpture most widely used (93%).

The fifty teachers with graduate audiovisual hours indicated wide use of SMC materials and services: professional literature (90%); selection participation (88%); consultation concerning materials (98%); and classroom use of materials (100%). These teachers reported wide utilization of nonprint media in presentations, eighty-six percent on the average for the ten listed items. In only two instances does teacher use fall below eighty percent: video tapes (72%) and television (68%).

On the average, ninety-two percent of these teachers with graduate audio-visual hours reported student visits to the SMC during class time: singly, 96%; in small groups, 92%; and as a class, 88%. Eighty-five percent, on the average, revealed student use of print and nonprint media for information. Highest percentages are 16 mm film (98%), posters, photos, study prints (96%), and pamphlets (96%). Widely used also are periodicals (94%), disc recordings (90%), tape recordings (90%), and textbooks (88%). Least widely used by their students for information are filmstrips or slides (62%) and television or radio (62%). On the average, sixty-four percent of their students use the six listed nonprint media in presentations. Most widely used by their students are transparencies (82%). On the average, sixty percent of their students are involved in the production of the six listed nonprint items. Most widely produced are drawings, paintings, posters, collage, sculpture (92%) and transparencies (60%), video tapes (66%), and audio tapes (62%).

Teachers with various academic degrees

The 187 teachers holding a bachelor's degree use SMC resources and services: professional literature (85%), participation in selection (70%), consultation (91%), and classroom use of materials (96%). On the average, seventy percent use the ten listed nonprint media in presentations. Most widely used are filmstrips (93%), models, maps, realia (90%), and 16 mm film (88%). Least widely used are slides (67%) and video tapes (36%).

On the average, eighty-five percent of these teachers holding a Bachelor's degree indicated class visit to the SMC: singly, 88%; in small groups, 79%; and as a class, 88%. Sixty-four percent of their students, on the average, use the listed media for information. Most extensively they use texts (90%) posters, photos, study prints (85%), and periodicals (84%). Least extensively they use video tape (15%). Fifty-percent of their students, on the average, use nonprint media in presentations. Most widely they use filmstrips (57%) tape recordings (56%) and transparencies (52%). Forty-one percent of their students prepare media. Most widely they produce drawings, paintings, posters, collage, and sculpture (89%).

The eighty-nine teachers who have attained the Master's degree level resort to the SMC for professional literature (89%), participate in selection (82%), consult about instructional materials (93%), and utilize materials in their classrooms (98%). They use nonprint media widely (89%). Highest

percentages use 16 mm film (96%), filmstrips (94%), and models, maps, realia (90%). Lowest percentages use video tapes (64%) and television presentations (58%).

Teachers with Master's reported class time SMC visits by their students (85%): singly, 93%; in small groups, 82%; and as a class, 80%. On the average seventy-four percent of their students resort to the fourteen listed media for information. Most widely used are pamphlets (96%), periodicals (93%), textbooks (92%), and posters, photos, study prints (90%). Sixty-two percent, on the average, use the six electronic nonprint media in presentations. Fifty-three percent, on the average, prepare the nonprint items listed. These students produce most extensively drawings, paintings, posters, collage, sculpture (85%) and video tape (71%).

Only five teachers with Specialist's degrees were surveyed. One hundred percent are involved with SMC resources and services: the professional collection, the selection process, consultative services, and materials use in classroom instruction. Nonprint media are widely used, by eighty-eight percent on the average. All use 16 mm films, filmstrips, opaque projections, and models, maps, realia.

SMC visitations by their students are singly, 80%; in small groups, 100%; and as a class 100%. These students, on the average, use media widely for information (83%). They all use texts, periodicals, pamphlets, posters, photos, study prints and educational games. Sixty-three percent, on the

average, produce materials, one hundred percent producing drawings, paintings, posters, collage, sculpture.

Teachers with various years of teaching experience

The 144 teachers with 0-5 years of teaching are involved with SMC resources and services: professional literature (81%), materials selection (69%), materials consultation (89%), and classroom use of materials (95%). On the average, sixty-eight percent of these teachers use the ten nonprint media listed in presentations. Most widely they use filmstrips (91%), models, maps, realia (88%), and 16 mm films (85%).

Teachers with 0-5 years in the field reported that their students visit the SMC during class periods (84%): singly, 88%; in small groups (78%); and as a class, (85%). Sixty-four percent of these students, on the average, turn to the listed media for information. They use widely textbooks (92%), periodicals (85%), and posters, photos, study prints (83%). They use less widely pamphlets (76%) and filmstrips or slides (71%). They use least widely television or radio (43%) and video tapes (32%). Forty-eight percent of their students utilize the six electronic nonprint media in presentations, with filmstrips most widely used (56%). Thirty-seven percent of their students produce materials, with drawings, paintings, posters, collage, sculpture most widely used (88%).

Teachers (72) with 6-10 years in the profession reported use of SMC materials and services in their educational efforts: professional literature (85%), materials selection (82%),

materials consultation (94%), and classroom use of materials (99%). Eighty-one percent, on the average, use the ten non-print media in presentations. Most widely they employ 16 mm film (96%) and filmstrips (97%), with models, maps, realia (93%) and tape recordings (90%) as close rivals. Least widely they use television (60%) and video tapes (61%).

Eighty-six percent of the teachers with 6-10 years of experience reported SMC visits by students during class time: singly, in small groups, 82%; and as a class, 86%. On the average, seventy-one percent of their students seek information in the listed media. They consult most widely textbooks (94%), pamphlets (94%), periodicals (93%), and posters, photos, study prints (92%). They use least widely television or radio (54%) and video tapes (35%). Their students, on the average, use media in presentations (59%) and produce media (30%). Most widely employed in presentation are filmstrips (63%); most widely produced are drawings, paintings, posters, collage, sculpture (90%).

The twenty-two teachers with 11-15 years in the field responded that they use widely professional literature (91%), participate in selection (68%), consult concerning materials (96%), and use SMC materials in their classrooms (96%). On the average, ninety-percent use the ten listed nonprint media in presentations. Most widely they use 16 mm film (96%), filmstrips (91%), and models, maps, realia (91%). Least widely they use television (64%) and video tapes (55%).

These teachers with 11-15 years in the classroom reported that their students visit the SMC during class (77%): singly, 91%; in small groups 73%; and as a class 68%. On the average, seventy-five percent of their students seek information in the media listed. Most widely they turn to periodicals (91%), pamphlets (91%), posters, photos, study prints (91%). Less widely they use texts (86%) and educational games (82%). Fifty-five percent, on the average, communicate with electronic nonprint media in presentations. Most widely they use tape recordings (64%); least widely they use opaque projections (36%). On the average, forty-percent produce materials. Most widely prepared are drawings, paintings, posters, collage, sculpture (91%).

The twenty respondents with 16-20 years of teaching indicated use of SMC resources in their educational undertakings: professional literature (100%), materials selection (85%), materials consultation (100%), and classroom use of materials (100%). On the average, seventy-seven percent of these teachers use the ten nonprint items listed in presentations. Most widely they use 16 mm film (95%), filmstrips and overhead projections (95%).

Teachers with 16-20 years in the classroom reported student visits to the SMC during class periods (98%): singly, 90%; in small groups, 80%; or as a class, 95%. Eighty-one percent of their students, on the average, consult the listed media for information. Most widely, they use transparencies (90%).

Less widely they consult pamphlets (85%), tape recordings (85%), filmstrips or slides (80%) and educational games (80%). Least widely they use video tapes (60%). Fifty-two percent of their students, on the average, use the listed electronic nonprint media in presentations. Thirty-nine percent produce media. Most widely prepared are drawings, paintings, posters, collage, sculpture (75%).

The twenty-five teachers having twenty or more years of experience reported wide use SMC resources: professional literature (96%), materials selection (80%), materials consultation (96%) and classroom use of the materials (100%). On the average, eighty-one percent of these teachers use the listed nonprint media. Most widely they use 16 mm film (100%) and filmstrips (100%). Least widely they use television presentations (40%).

Teachers with twenty or more years in the classroom reported student visits to the SMC during the class periods (90%): singly, 96%; in small groups (92%), and as a class (92%). On the average, eighty-five percent of their students seek information in the listed media. Most widely they use texts (96%) and tape recordings (96%). Least widely they use television or radio (64%) and video tapes (68%). On the average, eighty percent of their students use nonprint media in the class presentations and sixty-eight percent prepare materials. Most widely prepared are drawings, paintings, posters, collage, sculpture (96%).

Teachers on various grade levels

The nineteen Kindergarten teachers indicated involvement in the SMC: professional literature (95%), materials selection (53%), materials consultation (95%), and materials use in the classroom (100%). Seventy percent, on the average, use the ten nonprint media listed. Most widely used are filmstrips (95%), tape recordings (90%), and models, maps, realia (90%).

Kindergarten teachers also reported visits to the SMC (61%): singly, 53%; in small groups, 47%; and as a class, 84%. Sixty-five percent of their pupils on the average, seek information in the listed media. Most widely they consult posters, photos, study prints, (90%); least widely they use video tapes (42%) and disc recordings (47%). On the average, forty-nine percent use the six listed electronic nonprint media. Fifty-one percent produce materials, on the average. They use most widely drawings, paintings, posters, collage, sculpture (74%).

Respondents teaching on grade levels 1-3 indicated their use of SMC resources: professional literature (85%), materials selection (70%), materials consultation (97%), and use of materials in classroom (99%). Seventy-three percent, on the average, utilize the ten listed media in presentations. Most widely used are filmstrips (100%), 16 mm film (91%), and models, maps, realia (93%). Pupils of these primary teachers visit the SMC (65%): singly, 88%; in small groups, 75%; and as a class, 96%. On the average, sixty-five percent use the listed media for information. Most widely they use texts (89%).

Least widely they use video tapes (33%). On the average forty-three percent employ electronic nonprint media in presentations. On the average, forty-two percent perpare materials. Most widely they use drawings, paintings, posters, collage, sculpture (93%).

Teachers in grades 4-6 revealed their use of SMC resources (Items 1-4): professional literature (95%), materials selection (86%), materials consultation (98%), and use of library materials in their classrooms (100%). Eighty-one percent, on the average, utilize the ten nonprint items listed in class presentations (Item 5). Most widely used are filmstrips (100%), models, maps, realia (99%), 16 mm film (97%), and overhead projections (94%). Television (45%) and video tapes (41%) are least widely used.

Teachers in grades 4-6 indicated student SMC visits during class (99%): singly, 99%; in small groups, 98%; and as a class, 99%. Eighty percent of their pupils, on the average, resort to the listed media for information. They use widely texts (99%), periodicals (98%), posters, photos, study prints (97%), filmstrips or slides (93%) and transparencies (91%). Seventy-four percent, on the average, use the six listed electronic nonprint media in presentations. Forty-eight percent, on the average, produce media. Most widely they prepare drawings, paintings, posters, collage, sculpture (99%).

Teachers in grades 7-9 reported their involvement with SMC materials and services (Items 1-4): professional literature

(71%), materials selection (71%), materials consultation (83%), and use of library media in the classroom (88%). Fifty-nine percent, on the average, indicated use of the ten nonprint items listed in class presentations (Item 5). They use most widely filmstrips (97%) and models, maps, realia (92%). They use least widely video tapes (17%) and television (13%).

Teachers in grades 7-9 reported student visits to the SMC during class (79%): singly, 91%; in small groups, 75%; and as a class, 71%. Sixty-three percent of their students seek information in the listed media. Most widely used are texts (92%); least widely used are video tapes (29%). Thirty-eight percent present ideas with electronic nonprint media. Thirty-three percent produce the six listed media, on the average. Most widely produced are drawings, paintings, posters, collage, sculpture. (92%).

Teachers in grades 10-12 revealed their involvement with SMC materials and services (Items 1-4): professional literature (73%), materials selection (70%), materials consultation (79%), and media use in their classrooms (91%). Seventy-one percent of these teachers, on the average, use the ten listed nonprint media (Item 5). They use most widely 16 mm film (86%).

Senior high school teachers (grades 10-12) responded that their students visit the SMC during class (70%): singly, 91%; in small groups, 75%; and as a class, 54%. Seventy-two percent of these students, on the average, seek information

in the listed media. Most widely they use texts (91%); least widely they use 8 mm or Super 8 film (55%). Fifty-one percent, on the average, use the ten electronic nonprint media in presentations. Forty-one percent prepare media. Most widely they use drawings, paintings, posters, collage, sculpture (68%).

Teachers in various teaching areas

Thirty-two language arts teachers indicated their degree of involvement with the SMC resources: professional literature (81%), materials selection (81%), materials consultation (100%), and use of materials in the classroom (97%). On the average, seventy-seven percent use the ten listed nonprint media. Most widely utilized are models, maps, realia (94%), disc (91%) and tape (91%) recordings. Least widely used are opaque projections (56%) and televised presentations (53%).

Teachers of language arts reported class time visits to the SMC (85%): singly, 97%; in small groups, 84%; and as a class, 75%. Seventy-six percent of their students seek information in the listed media. Most widely these students use texts (97%), periodicals (94%), tape (91%) and disc (91%) recordings. Least widely they use loop films (44%). Fifty-seven percent use the six listed electronic nonprint media. Most widely they employ disc recordings (69%). Forty-six percent prepare the six nonprint items listed. They most widely prepare drawings, paintings, posters, collage, sculpture (94%).

Nine fine arts instructors responded to reveal their relationship with the SMC and its services: professional literature (78%), materials selection (78%), materials consultation (67%), and classroom use of materials (89%). Sixty-nine percent use the ten nonprint media listed. They indicated wide use of 16 mm film (100%) and disc recordings (100%). They reported least use of television (33%) and video tapes (44%).

Seventy-four percent of the teachers in the fine arts recorded class time SMC visits: singly, 78%; in small groups, 78%; and as a class, 67%. Sixty percent of their students, on the average, seek information in the listed media. Most widely used are discs (100%); least widely, texts (33%). Sixty-seven percent, on the average, present ideas with the six listed electronic media. Most widely used to communicate are disc (67%) and tape (78%) recordings. Fifty percent of these students, on the average, prepare materials. Most widely they produce drawings, paintings, posters, collage, sculpture (67%) and disc recordings (56%).

Nineteen social studies teachers indicated the extent of their involvement with SMC resources: professional collection (90%), materials selection (84%), materials consultations (79%), and classroom use of media (100%). Sixty-nine percent, on the average, use the ten nonprint media listed. Most widely they employ models, maps, realia (95%), overhead projections (90%)

and 16 mm film (90%). Least widely they use video tapes (42%) and television presentations (42%).

Teachers in the social studies area reported student visits to the SMC during class periods (82%): singly, 100%; in small groups, 79%; and as a class, 67%. Sixty-five percent of their students use the listed media for information. Most widely these students turn to tape recordings (84%), disc recordings (79%), periodicals (78%), and posters, photos, study prints (78%). Fifty percent, on the average, use the listed electronic nonprint media. Most widely they use transparencies (63%) and tape recordings (63%). Thirty-six percent, on the average, prepare media. Most widely used, drawings, paintings, posters, collage, sculpture (84%); least widely used, 8 mm or Super 8 (16%) and video tapes (16%).

Twenty-seven science and mathematics instructors responded to indicate their degree of participation in SMC services: professional literature (78%), materials selection (74%), and classroom use of materials (89%). Sixty-five percent of these teachers, on the average, utilize the ten listed non-print media. Most widely they use overhead projections (85%) and filmstrips (82%). Least widely they use television (44%), video tapes (44%), and disc recordings (44%). Math and science teachers reported student visits to the SMC during class time (73%): singly, 82%; in small groups, 70%; and as a class, 63%. Sixty-seven percent of their students use the listed media for information. Most widely their students use

texts (96%); least widely they use video tapes (41%). Forty-six percent of their students use the six electronic nonprint media in presentations. Most widely they use transparencies. Twenty-nine percent produce media, on the average. Most widely produced are drawings, paintings, posters, collage, sculpture (70%).

Twenty-four respondents in the practical arts also revealed their level of SMC involvement: professional literature (67%), materials selection (58%), materials consultation (71%), and classroom use of media (86%). Fifty-eight percent, on the average, use theten nonprint media in presentations. Most widely they utilize 16 mm film (92%). Least widely they utilize television (25%).

On the average, seventy-five percent report student SMC visits during class: singly, 92%; in small groups, 75%; and as a class, 58%. Sixty-two percent of their students, on the average, seek information in the listed media. Most widely they use periodicals (88%), pamphlets (88%), and texts (83%). Least widely they use television or radio (25%). Fifty-one percent, on the average, use the six electronic nonprint media to present ideas. Thirty-eight percent, on the average, prepare media. Most widely, they produce drawings, paintings, posters, collage, sculpture (71%).

Beginning and Experienced Teachers and Their Media Use

Sixty-seven beginning teachers from twenty-six schools in four school systems (Great Bend, Manhattan, Salina, and Shawnee Mission) completed the "Preliminary Checklist" in December, 1970. Two-hundred and twenty experienced teachers in nineteen schools in Shawnee Mission responded to the same device in April, 1971.* An analysis of the data gathered from beginning and experienced teachers follows.

Beginning teacher use of print and nonprint media (Figure 9). Beginning teachers check out and read professional literature (84%), participate in selection (72%), consult concerning materials (90%), and use SMC materials to arouse interest and convey knowledge in the classroom (97%). On the average, sixty-three percent use the ten listed media in class presentations. Most widely used are filmstrips (91%), models, maps, realia (87%), and 16 mm film (79%). Least widely used are television (27%) and video tapes (25%).

Eighty-five percent of the beginning teachers, on the average, indicated student SMC visits during class periods: singly, 87%; in small groups, 81%; and as a class, 88%. On the average, sixty-one percent reported student use of media for information. Most widely their student use textbooks (92%), periodicals (82%), posters, photos, and study prints (82%), and educational games (89%). Least extensively their students resort to television and radio (34%) and video tapes (21%).

*This portion of the study drops one respondent.

Figure 9. Teacher-Student Media Use: Percentages of Beginning and Experienced Teachers and Their Respective Students.

Teacher Use of Print and Nonprint Media	B	E
1. I check out and read professional literature available in the School Media Center.	84	86
2. I am involved with the school media specialist in the selection of materials for the collection.	72	75
3. I consult with the school media specialist concerning materials and services related to instructional units.	90	93
4. I use materials from the School Media Center to arouse interest and convey knowledge in my classroom.	97	97
5.0 In class presentations I utilize one or more of the nonprint media. I use:		
a. 16mm film	79	94
b. filmstrips	91	94
c. slides	55	69
d. opaque projections	52	72
e. overhead projections	73	87
f. tape recordings	66	85
g. disc recordings	73	76
h. video-tapes	25	56
i. televised presentations	27	53
j. models, maps, realia	87	91

Student Use of Print and Nonprint Media	B	E
6.0 During class periods my students visit the School Media Center. Students visit:		
a. singly	87	91
b. in small groups	81	80
c. as a class	88	85
7.0 My students seek information in print and nonprint media to answer their problems. They use:		
a. textbooks	92	91
b. magazines and newspapers	82	89
c. pamphlets	73	87
d. posters, photos, study prints (any or all)	82	87
e. 16mm film	52	70
f. 8mm or Super 8 film	40	59
g. filmstrips or slides	75	79
h. loop films	43	67
i. educational games	79	78
j. transparencies	63	77
k. tape recordings	61	74
l. disc recordings	57	68
m. video tapes	21	49
n. televised or radioed material	34	57
8.0 My students use a variety of nonprint media in class presentations. They use:		
a. filmstrips	54	63
b. slides	38	54
c. transparencies	45	62
d. opaque projections	36	52
e. disc recordings	42	55
f. tape recordings	52	60
9.0 My students prepare for their use materials for teaching and learning. They prepare:		
a. drawings, paintings, posters, collage, sculpture (any or all)	91	88
b. transparencies	31	47
c. slides	19	36
d. 8mm or Super 8 film	19	28
e. audio tapes	36	47
f. video tapes	16	30

On the average forty-five percent utilize the six listed electronic media in class presentations. On the average, thirty-five percent prepare the six listed materials: most widely, drawings, paintings, posters, collage, sculpture (91%); least widely, video tapes (16%).

Beginning teachers use electronic nonprint media in class presentations: filmstrips (91%), overhead projections (73%), tape (66%) and disc (73%) recordings, opaque projections (52%), and slides (55%). Their students also utilize nonprint media in class presentations: filmstrips (54%), overhead transparencies (45%), tape (52%) and disc (42%) recordings, and slides (38%).

Experienced teacher use of print and nonprint media. Veteran teachers, those with three or more years of professional experience, use professional literature (86%), participate in selection (75%), consult concerning materials (93%), and use SMC materials in their classes (97%). On the average, eighty-one percent use the ten nonprint media in classroom presentations: most widely, 16 mm film (94%), filmstrips (94%), and models, maps, realia (91%); least widely, video tapes (56%) and television (53%).

On the average, eighty-five percent have class time SMC visits by students: singly, 91%; in small groups, 80%, and as a class, 85%. Seventy-four percent of the students of experienced teachers consult the listed media for information.

Most widely their students use textbooks (91%), periodicals (89%), pamphlets (87%), and posters, photos, study prints (87%). Least extensively these students utilize television and radio (57%) and video tapes (49%). On the average, fifty-eight percent use the six nonprint media in class presentations and forty-six percent use the six nonprint media in class presentations and forty-six percent prepare media. Most widely, these students produce drawings, paintings, posters, collage, sculpture (88%); least widely, they prepare video tapes (30%).

Experienced teachers use electronic nonprint media in class presentations: filmstrips (94%), overhead projections (87%), disc (76%) and tape (85%) recordings, and slides (69%). Students of experienced teachers also communicate in the classroom with these media: filmstrips (63%), overhead transparencies (62%), disc (55%) and tape (60%) recordings, and slides (54%).

V. THE DATA INTERPRETED

All Respondent and Media Use

Teacher use of media

The Perkins (14) (1965) and Walker (19) (1967) studies of prospective teachers confirmed Evans' (18) (1964) earlier discovery that teachers in training know little about books and libraries. Data supplied by the present study reveal that most of the teachers surveyed do understand, at least in part, the educational function of the school media center, for they are using to some extent and with some frequency its resources in their teaching. With some degree of frequency, most teachers querried turn to the SMC for professional literature and consultation and to participate in materials selection and use.

The teachers questioned use filmstrips and 16mm film widely and frequently. They also use extensively and often conventional nonprint media--models, maps realia. Availability, familiarity, and ease of use may contribute to this extensive use. Transparencies, versatile and relatively inexpensive, enjoy wide but less frequent use.

Teacher use of tape and disc recordings is also broad but relatively infrequent. One fifth of the respondents never use tape; one fourth never use discs.

In her 1962, audiovisual survey, however, Godfrey determined that films, filmstrips, and records were the three most

popular traditional materials with all instructional groups. Her findings indicated that recordings were most popular on the elementary level and in secondary music, English, and foreign language. (10, 59) The present study also finds relatively wide use of films and filmstrips, but not of records. Third most popular with the present entire sample of teachers is conventional nonprint media--models, maps, realia, items not included in Godfrey's listing of exclusively electronic media.

Godfrey also found that high use (an average of at least once a week) was more characteristic of records and tapes than of film. "It is clear that auditory instruction via tapes or records was much more likely to be an integral part of the regular classroom routine than was instruction via any of the visual media." (10, 61) In the present study, however, most frequent use (almost daily or weekly, bi-weekly) is enjoyed by nonprint visual media: models, maps, realia; filmstrips; overhead projections; and 16mm films -- in that order.

Obvious differences between the Godfrey (10) research and the present study could account for disparities in findings--such as the size, composition, and geographical extent of the sample, the dates of data gathering, and the definition of the term media. Differences are quite startling and it is tempting to ascribe them to increased teacher media orientation and competence. For instance, forty-nine percent of Godfrey's sample (1961) used records, but seventy-four percent of the

present sample (1970-1971) did so; twenty-two percent used tapes in the earlier sample, but eighty percent did so in the present sample. Comparison of like items (films, filmstrips, records, tapes, TV, slides, and overhead projections) reveals consistently higher percentages, on the average, for the incidence of teacher electronic media use in the present study.

Lange, in his survey of research, refers to the packaging of audio stimuli as the most significant recent development in media--and the most neglected. Why is this inexpensive and available medium slighted in the schools? Lange suggests that the fault may lie with an addiction to print media. (11, 31) He also records a 1962 prognostication now overdue and unconfirmed by the present survey. A decade ago principals predicated the use of tape in secondary schools in 1965-1966; much use (60%); some use (39%); and none (1%). (13, 22) Data yielded by the present study reveal high incidence of teacher use of both tape and disc recordings but relatively low frequency. About one-fourth use these media almost daily or weekly, bi-weekly and around one half (disc 45%; tape 55%) use them monthly, bi-monthly or during each semester.

In our schools there seems to be a sturdy preference for visual stimuli, symbols and images. This preference is confirmed when most learners seem more receptive to visual than to aural stimuli. Yet teachers are cultivating listening skills, and some are experimenting with exciting sight and sound

combinations. Sound filmstrips, engaging two senses, have focused attention in a new direction. Now some learning kits provide a partial sound track so that students may dub in their own narration to accompany a filmstrip. Speeded tape stimuli, paced to fit the mind of the listener rather than the voice of the speaker, may add another impetus to improved listening. How can teachers escape further involvement in the sound dimension?

Few teachers reported that they use slides, opaque projections, television and video tape, and they use them with relative infrequency. Perhaps slide sets are not too plentiful in SMC collections. Quite probably available opaque projectors are monsters, old and hard to maneuver. Is television viewing, in most schools, confined to commercial broadcasts of notable events--say the occasional splash down of astronauts? Are video tapes produced only occasionally, perhaps as a culminating activity--say a final seminar on urban problems with participating consultants?

Findings of this study concerning teacher involvement with media should be placed in an historical perspective. After her initial survey (1961) of 11,531 teachers in 572 schools in 250 districts, Godfrey concluded that the basic equipment was available in the schools, "yet, the majority of the respondents did not use any material as often as once a week, nor did they plan to do so in the near future." (10, 37) A survey of principals (1962) revealed their judgements

concerning the acceptance of instructional innovations in media: positive acceptance in 32% of the schools; lukewarm acceptance in 63%; and a negative attitude in only 5%. (13,22)

Godfrey disclosed reasons for the teachers' lack of media involvement and their lack of enthusiasm for media use. Teachers, she discovered, most often used audiovisual materials for enrichment purposes; teachers, she asserted, will respond only to audiovisual techniques and materials which further their instructional goals. If audiovisual media are to become integral parts of the instructional program, according to Godfrey, "individual consultative professional service is as important as adequate and appropriate resources..." (10,75)

Consultative services and expanded resources were part of the considerable school media center development of the Sixties, given impetus by nationwide foundation and government support. A decade of school library development has passed. As media resources and services have slowly expanded, teacher media behaviors have gradually responded. High percentages of the teachers marking the "Checklist" use print and nonprint media, with the exception of slides, opaque projections, television and video tape. Frequency of use lags, especially of media less widely used. Faltering beginnings in the early Sixties have become slow steps forward in the early Seventies as media become essential tools in creative inquiry.

Student use of media

Three patterns of student visits to the SMC during class periods are evident: the traditional regularly scheduled class visits, less conventional unscheduled individual visits, and less frequent small-group visits. Davies advocates "a 'free' library schedule so the library will be available for use and the librarian will be free to give the student--class, group, or individual--his individual attention." (8,84) Data gathered in this study reveal that while class visits predominate, individual, and to a slightly less extent small-group visits, have gained favor. Does this shift indicate that the SMC materials and resources are more and more serving a curriculum centered on student inquiry? Does this move toward flexibility signal a changing role for the classroom teacher, shifting him from knowledge transmission to learning guidance? Is media gradually permeating the school, bursting the confines of the school media center?

The teachers queried reported wide and frequent student use of textbooks, substantiating Lange's observation: "The textbook is still king." (11, 38) Wide and frequent use of periodicals/pamphlets is surprising, however. Have teachers and librarians guided students to government documents, such plentiful, inexpensive, and authoritative sources of information? Are students turning to vertical files including pamphlets to find up-to-the-minute information?

Somewhat less widely and frequently used by students for information are filmstrips or slides, educational games, loop films and transparencies. Do these students have available an extensive collection of sound-filmstrips keyed to their curricula? Probably not in some instances. Are the educational games purchased from vendors? Or are some of them springing from the minds and imaginations of teachers and students? Whatever their origin, educational games, which are among the newer teaching devices, seem to be establishing a place in the classroom. Why loop films and transparencies are not used widely and frequently as information carriers by students is beyond the scope of this study. Conjecture suggests that collections of these materials may be less extensive or less accessible, or that the values peculiar to these media are less understood by teachers. The use of loops and transparencies should appeal to young people seeking versatile, individualized media.

Student use of several electronic media seems to be relatively restricted and infrequent: tape recordings, 16 mm film, disc recordings, 8 mm and Super 8 film, television and radio, and video tape. The last three mentioned are not as yet widely available in schools. The first three mentioned are available in some quantity, but they are not used extensively by students as sources of information. Inadequate levels of collection may be the basic problem. Inadequate guidance may also contribute.

Here we refer to Schramm's survey (1958-59) (15, 37), which found an overwhelming response by youth to media "which operate at the turn-of-a-switch and are recent."

Which Medium Would You Miss Most If You Had To Do Without It?*

Medium	Grade:	8th	10th	12th	8th	10th	12th
		Boys			Girls		
Books		6%	5%	5%	7%	6%	13%
Magazines		4	2	2	0	1	2
Newspaper		5	11	2	4	3	11
Comic Books		3	1	0	2	1	0
Television		71	58	33	61	45	38
Radio		4	17	32	22	39	33
Movies		3	5	4	3	3	4

*No answer from about 3% of the children

Today's youth would probably respond similarly. No doubt they would add disc and tape recordings to their list of most missed. Yet their most favored media are among those they use least often as information sources inside the school.

Student use of nonprint media in classroom presentations may be compared to teacher use of like media (Figure 10). In each instance teacher-use exceeds that of students, leading to the surmise that the teacher is still the principal human conveyor of mediated information in the classroom. The differences between teacher and student-use remain fairly constant, with the exception of slides. In this instance some students may have discovered the delights of the Ectographic Kit. This study concludes, however, that students do not widely or frequently use nonprint media in presentations.

Student preparation of nonprint non-electronic media is widespread and frequent. Electronic media are prepared seldom and

by a fortunate few. Present costs should not preclude student preparation of transparencies, slides, or Super 8 film. Audio tapes are relatively inexpensive and re-usable. Video tapes also erase. In the near future, with teacher and librarian guidance, the student may be able to prepare inside the school the electronic media he uses freely outside. At that time he will be utilizing new learning tools as he participates in creative inquiry.

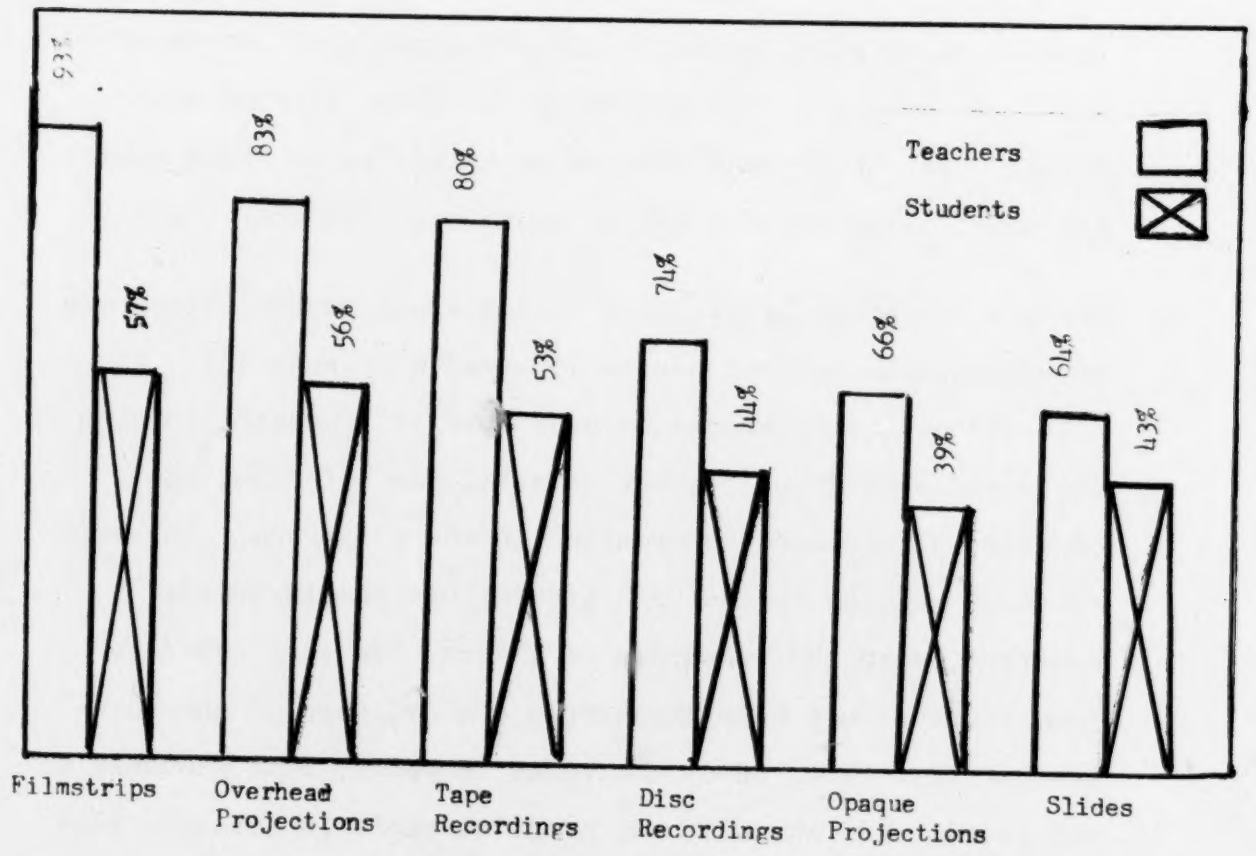

Figure 10. Comparison of Teacher and Student Use of Nonprint Media in Presentations, with Various Frequencies. Checklist Items 5 and 8.

Student involvement in media is summarized in Figure 11, which shows sixty-seven percent, on the average, using print and nonprint media as sources of information; forty-nine percent, on the average, using nonprint media in presentations; and thirty-five percent, on the average, preparing nonprint media. Generally, frequency of use declines with breadth of use. This study establishes that students of the teachers surveyed are using media extensively as information carriers to gain traditional knowledge and techniques. To a lesser degree they are using media to communicate ideas in presentations. To a minimal degree these students are preparing media. At this time, as measured by Taylor's theoretical model, few of these students are engaging in creative inquiry.

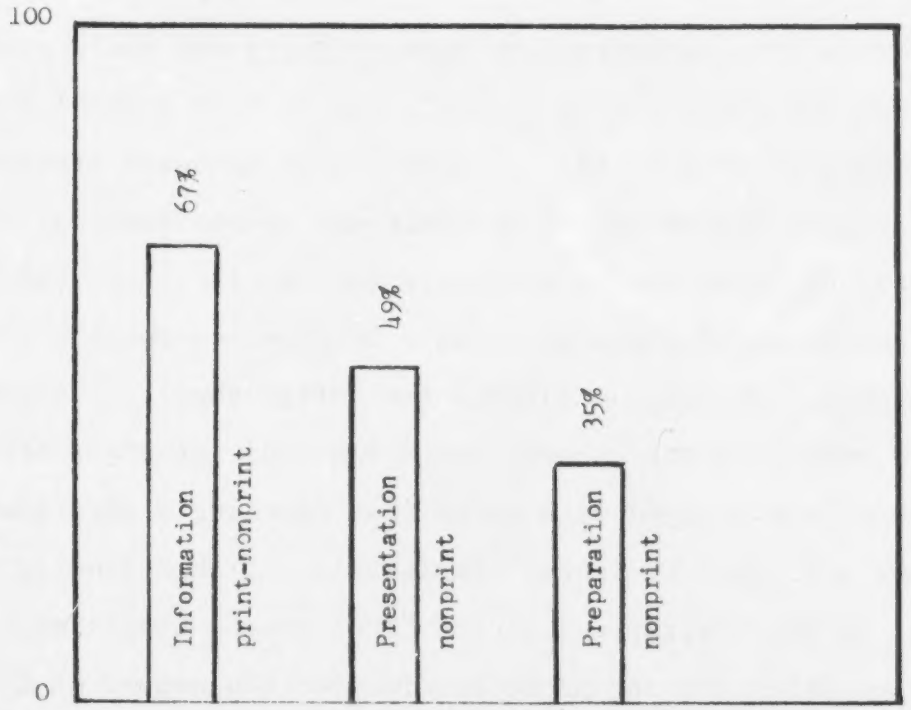

Figure 11. Average Percentages of Student Media Use: Information, Presentation, Preparation Checklist Items 7,8, and 9.

Teacher Characteristics and Media Use

A saw familiar to school librarians reads: Every librarian is a teacher; every teacher, a librarian. Interpreted, these words mean that while the roles of school librarians and teachers differ, their functions overlap in both directions. Acknowledging this fusion, some educators have advocated library education for teachers. With the growing emphasis on creative inquiry and individualized learning, both involving multimedia interaction, this advocacy has become insistent. It is appropriate to inquire whether teachers with library hours and their students are actually more extensively involved with media than other teachers and their students.

Teachers with undergraduate library hours and their students exceed the whole sample in media use in each general question or category (Figure 12). Teachers with graduate library hours exceed the entire sample in their use of professional literature and their use of materials in the classroom, but fall below the respondents as a whole in other respects. Their students, however, do surpass the entire sample. Teachers with undergraduate library hours and their students are more extensively engaged with media than teachers with graduate hours and their students. Explanation of this finding could rest in the limitations of the "Preliminary Checklist," a device which did not probe to discover the number of library hours or the appropriateness of the courses taken for

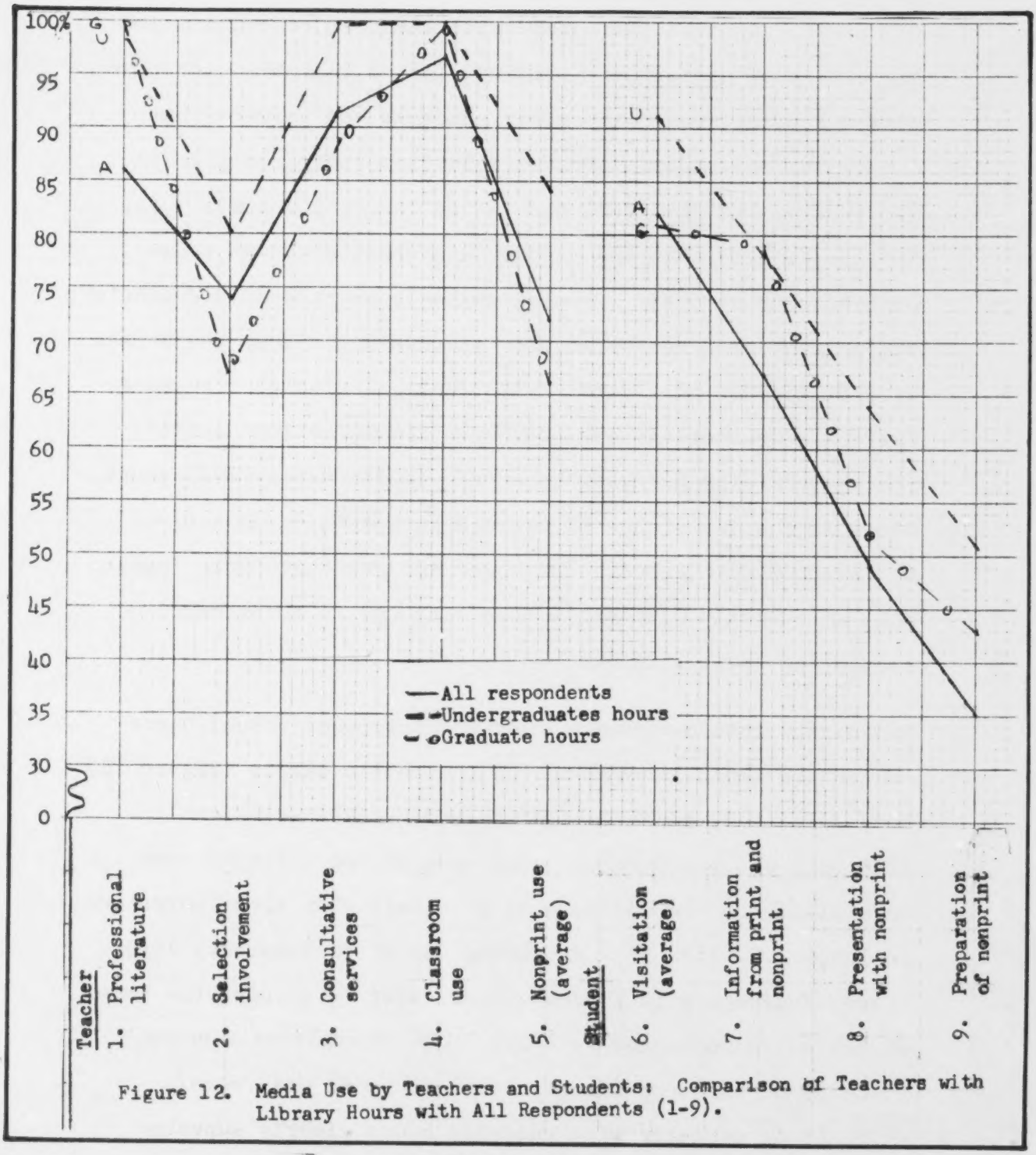

Figure 12. Media Use by Teachers and Students: Comparison of Teachers with Library Hours with All Respondents (1-9).

elementary or secondary school teachers.

Educators have also advocated that classroom teachers master the skills of audiovisual presentation so that they may communicate effectively with their students and provide them communications models. Bruner maintains that "the teacher constitutes the principal aid in the teaching process." (5, 88) It follows that the teacher's effectiveness as a communicator is crucial. Growing emphasis on student preparation and presentation in the inquiry process underlines the necessity of teacher proficiency with media--including electronic devices. To increase the teacher's communications skills, teacher-training programs have been adding audiovisual hours, often at the insistence of state departments of education. Do teachers with audiovisual hours and their students engage more extensively with media than teachers in the general sample and their students?

Teachers with undergraduate and graduate audiovisual hours exceed the media involvement of the entire sample (Figure 13). Thus this study tends to confirm Godfrey's conclusion: "Teachers who had received some specialized training were more likely to use audiovisual materials than their untrained colleagues." (10, 57) Excepting use of professional literature, teachers with graduate hours meet or surpass the level of media use indicated by those with undergraduate hours. Students of both sub-samples excel in media use, with students of teachers with graduate hours clearly superior.

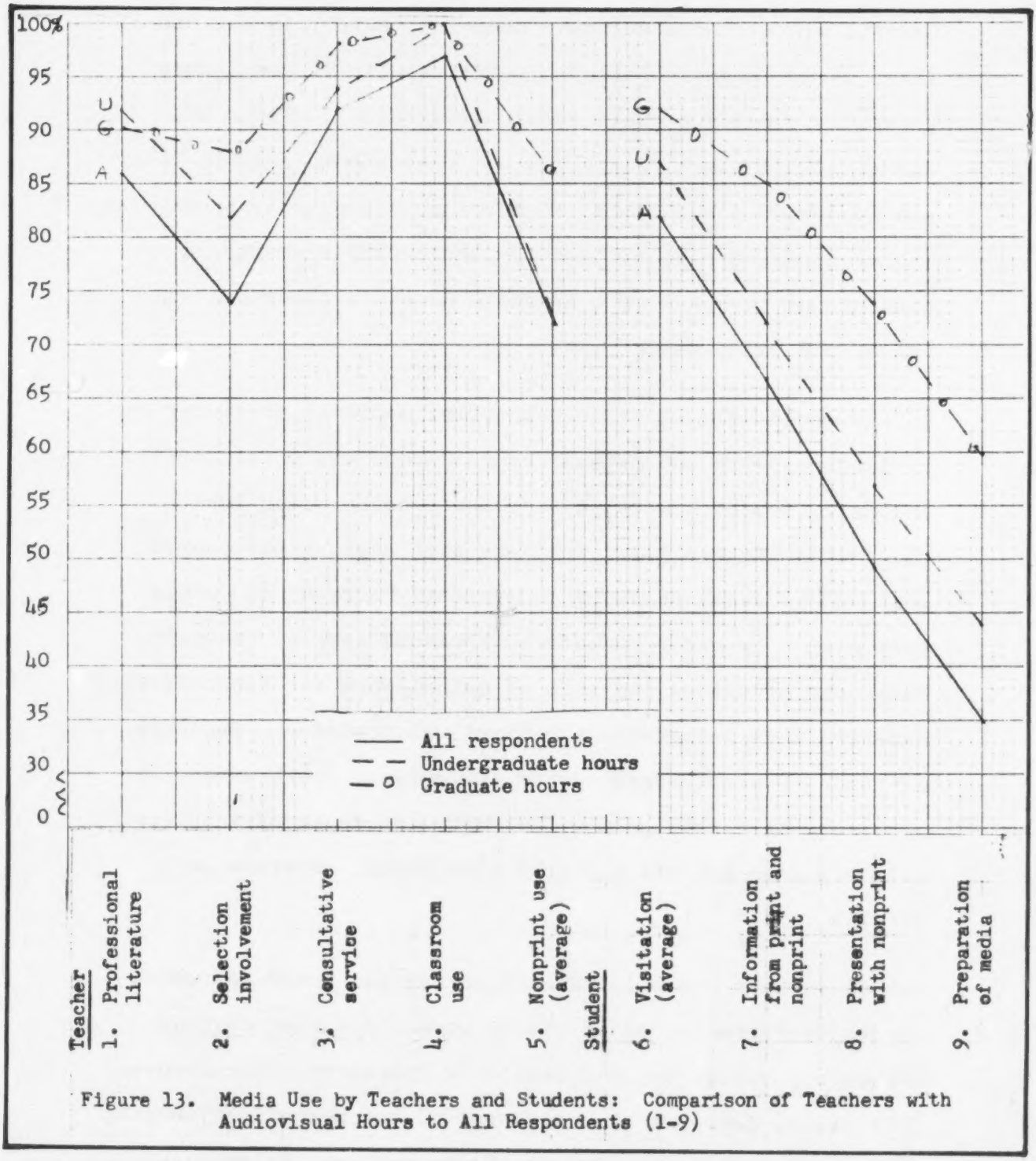

Figure 13. Media Use by Teachers and Students: Comparison of Teachers with Audiovisual Hours to All Respondents (1-9)

How widely do teachers with library or audiovisual hours use the six listed electronic nonprint media? In the use of these media in presentations, teachers with library hours generally excel the whole sample (Figure 14). Those with undergraduate hours fall below all respondents only in their use of opaque projections. Generally, students of those with library science also surpass the whole sample--excepted are students of teachers with graduate hours in their use of opaque and slide projections.

In the use of six electronic nonprint media in presentations, respondents with audiovisual hours exceed the total sample, excepting teachers with undergraduate hours using tape recordings (Figure 15). Teachers with audiovisual course work on the graduate level consistently surpass the whole sample and the undergraduate audiovisual sample, excepting their use of slides, an area of coincidence for teachers with undergraduate and graduate audiovisual training. Students of teachers with undergraduate audiovisual hours exceed the whole sample: average use, 57%/49%. Students of teachers with graduate audiovisual work also excel: average use, 57%/74%.

School systems commonly have incentive pay schedules which reward teachers for added course work and earned degrees. Higher pay recognizes the teacher's increased effectiveness. This study, focusing on one aspect of teacher effectiveness, gathered data to determine if there were some relationship

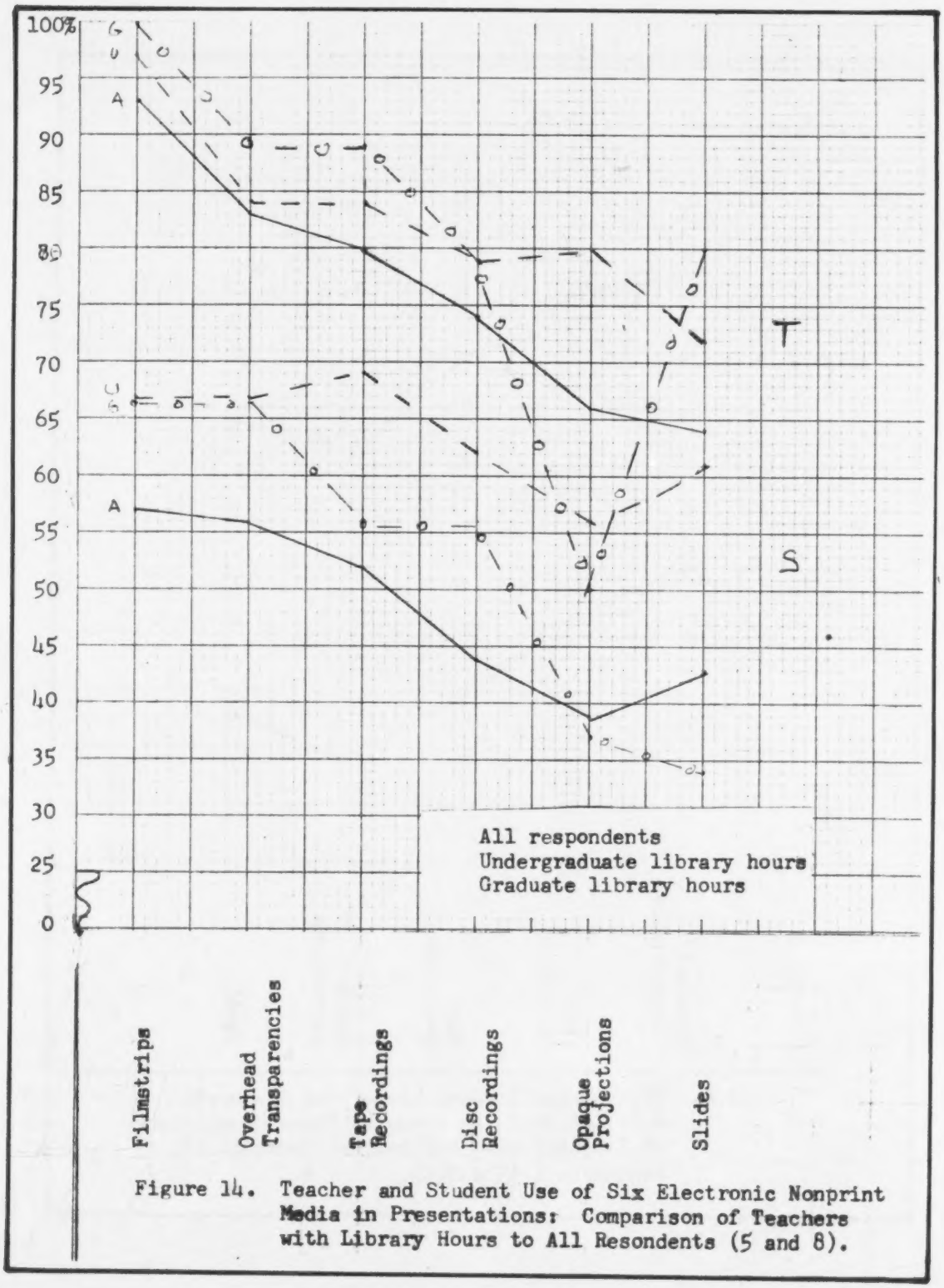

Figure 14. Teacher and Student Use of Six Electronic Nonprint Media in Presentations: Comparison of Teachers with Library Hours to All Resondents (5 and 8).

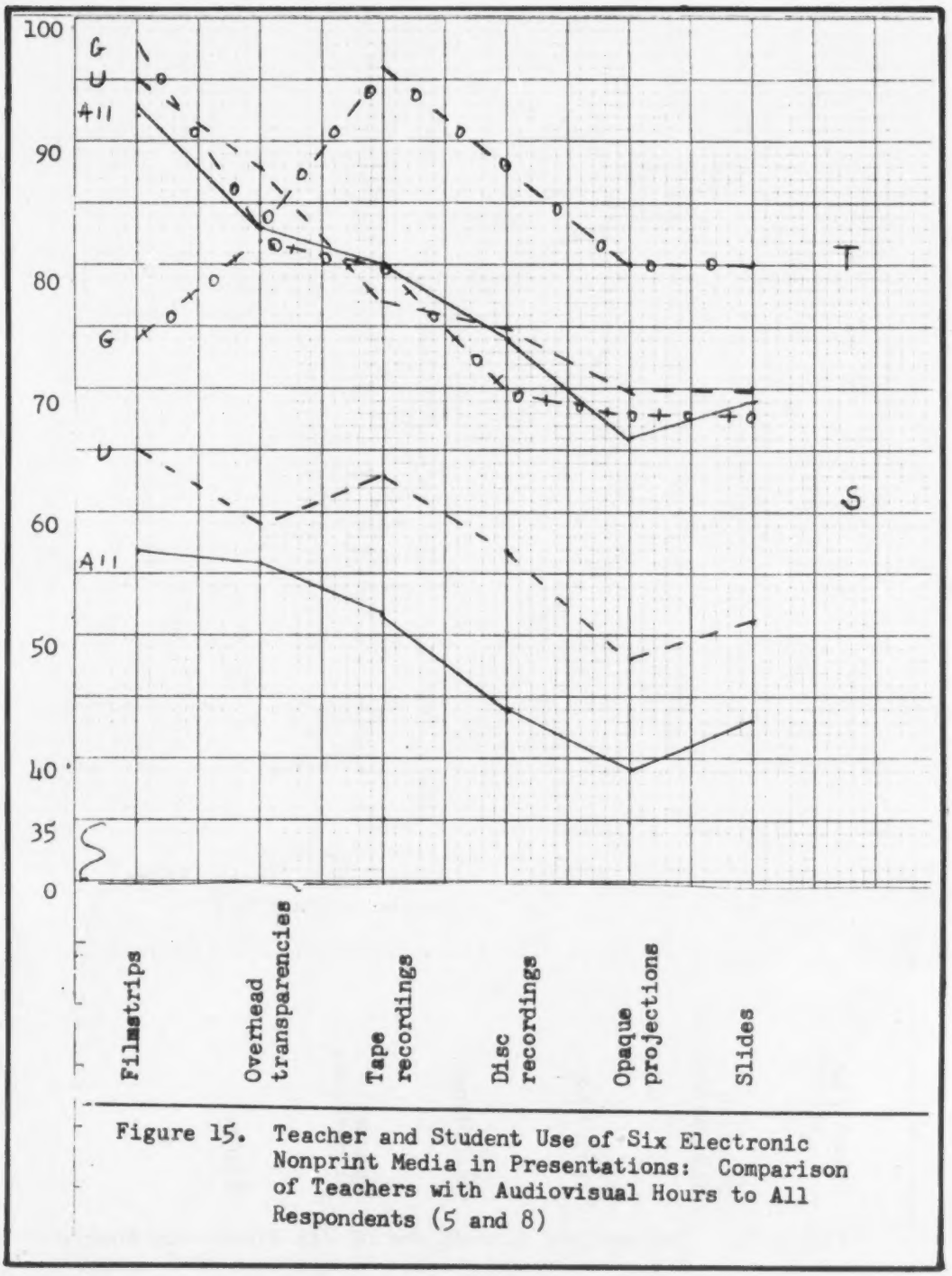

Figure 15. Teacher and Student Use of Six Electronic Nonprint Media in Presentations: Comparison of Teachers with Audiovisual Hours to All Respondents (5 and 8)

between the teacher's highest degree and the teacher's media use.

Holders of Bachelor's degrees reported slightly less extensive media involvement than respondents in the whole sample (Figure 16). Their students, however, fall below the entire sample in only one instance, use of media for information. Teachers with Master's and their students surpass the total sample on each general question (1-3) and category (4-9) Respondents with Specialist's degrees registered full media involvement, with the exception of nonprint media use in presentations. Their students also exceed the whole sample and the other sub-samples, revealing a notable percentage producing materials.

In the use of six electronic nonprint media, teachers with Bachelor's degrees equal the whole sample in the percentage using filmstrips and overhead transparencies but fall below in other items (Figure 17). Their students fall below the whole number only in the use of overhead transparencies. Teachers with Master's equal or surpass the whole sample consistently and so do their students. Teachers with Specialist's dip below the entire sample only in their use of overhead transparencies. Their students exceed the total sample in the percentage using each of the six media. Holders of Specialist's degrees and their students registered parallel media use, relatively high percentages of each utilizing filmstrips.

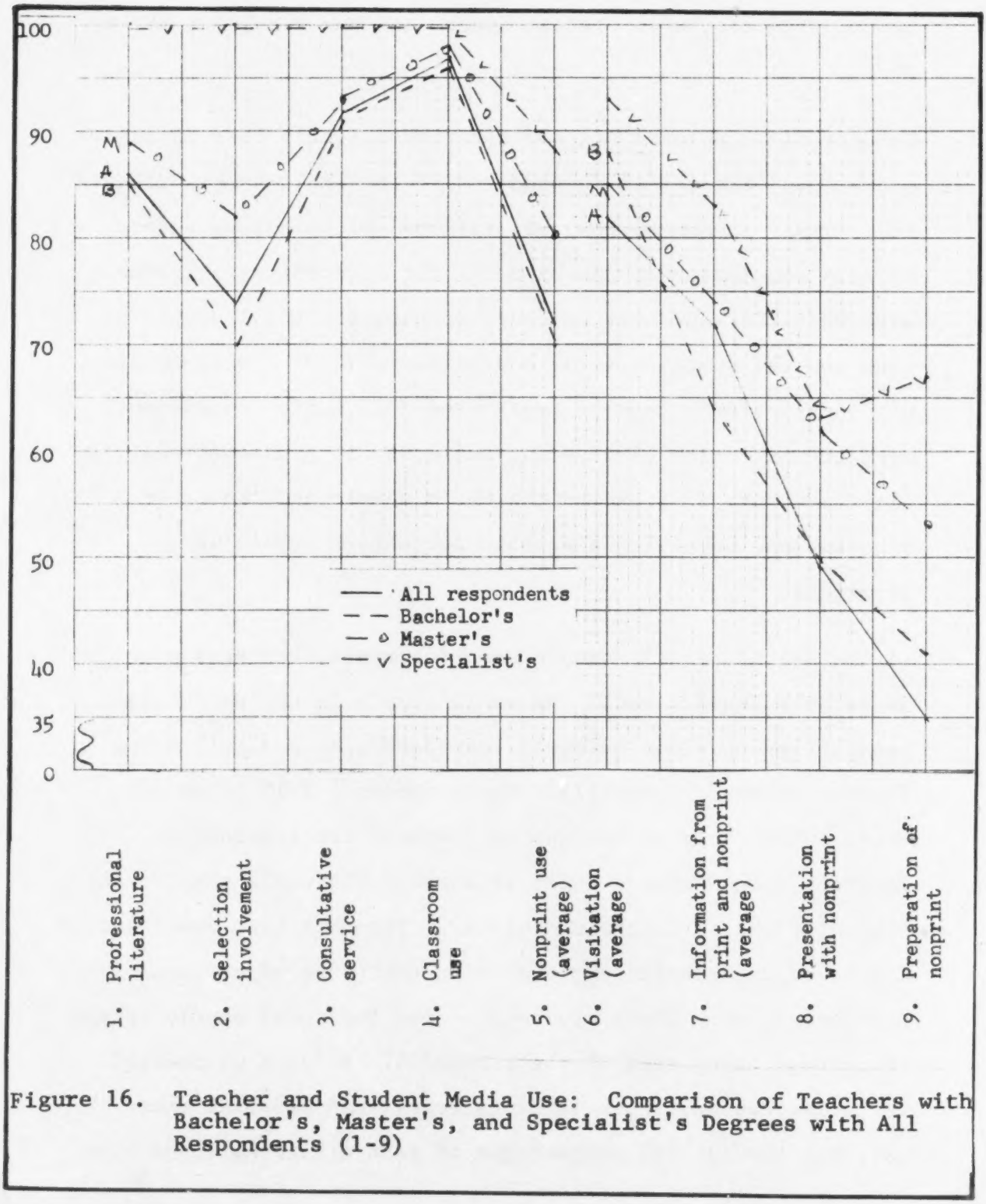

Figure 16. Teacher and Student Media Use: Comparison of Teachers with Bachelor's, Master's, and Specialist's Degrees with All Respondents (1-9)

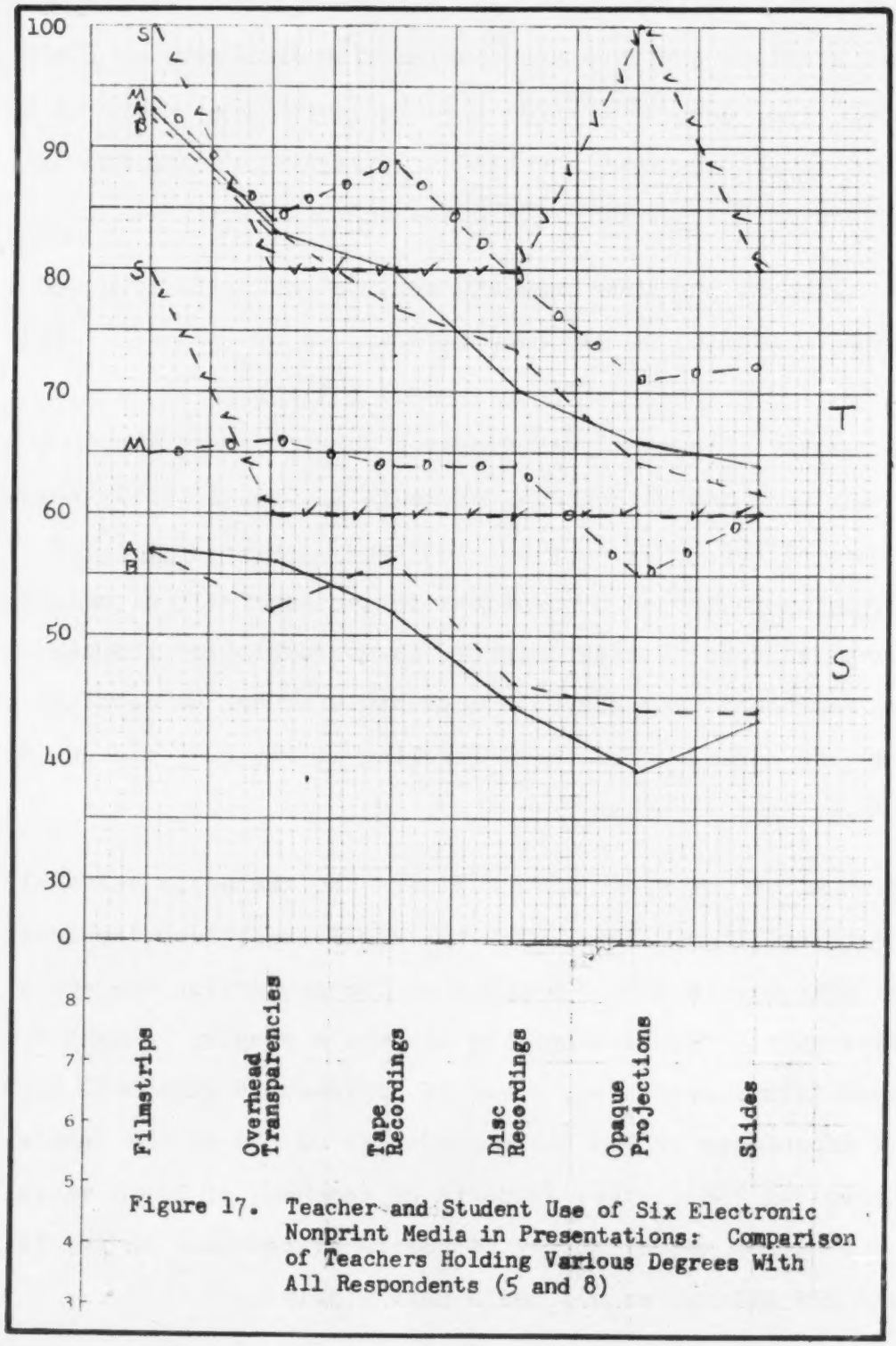

Figure 17. Teacher and Student Use of Six Electronic Nonprint Media in Presentations: Comparison of Teachers Holding Various Degrees With All Respondents (5 and 8)

Godfrey established that the "degree of formal education had a slight positive association with incidence of /media/ use." (10, 55) This study also indicates that there is some relationship between the teacher's highest degree and his students' involvement with media center resources.

Do teachers who have recently entered the profession and their students use SMC materials and services more or less widely than their more experienced colleagues and their students? Figure 18 demonstrates that teachers with 0-5 years reported percentages of media use consistently below those of the whole sample. Teachers with 6-10 years of teaching indicated percentages of use generally exceeding the complete sample, with slightly lower levels for the use of professional literature. Successivly higher percentages of use are recorded for those teaching 11-15, 20+, and 16-19 years, in that order.

Student use of media also reflects the teacher's years of teaching (Figure 19). With two small exceptions, students of instructors with 0-5 years in the profession use media less widely than students in the whole sample. Except for materials preparation, students of teachers with 6-10 years of experience exceed the percentages of the entire sample. Excepting SMC visits, students of teachers of 11-15 years surpass the whole sample. Students of teachers in the 16-20 and 20+ categories use media most widely.

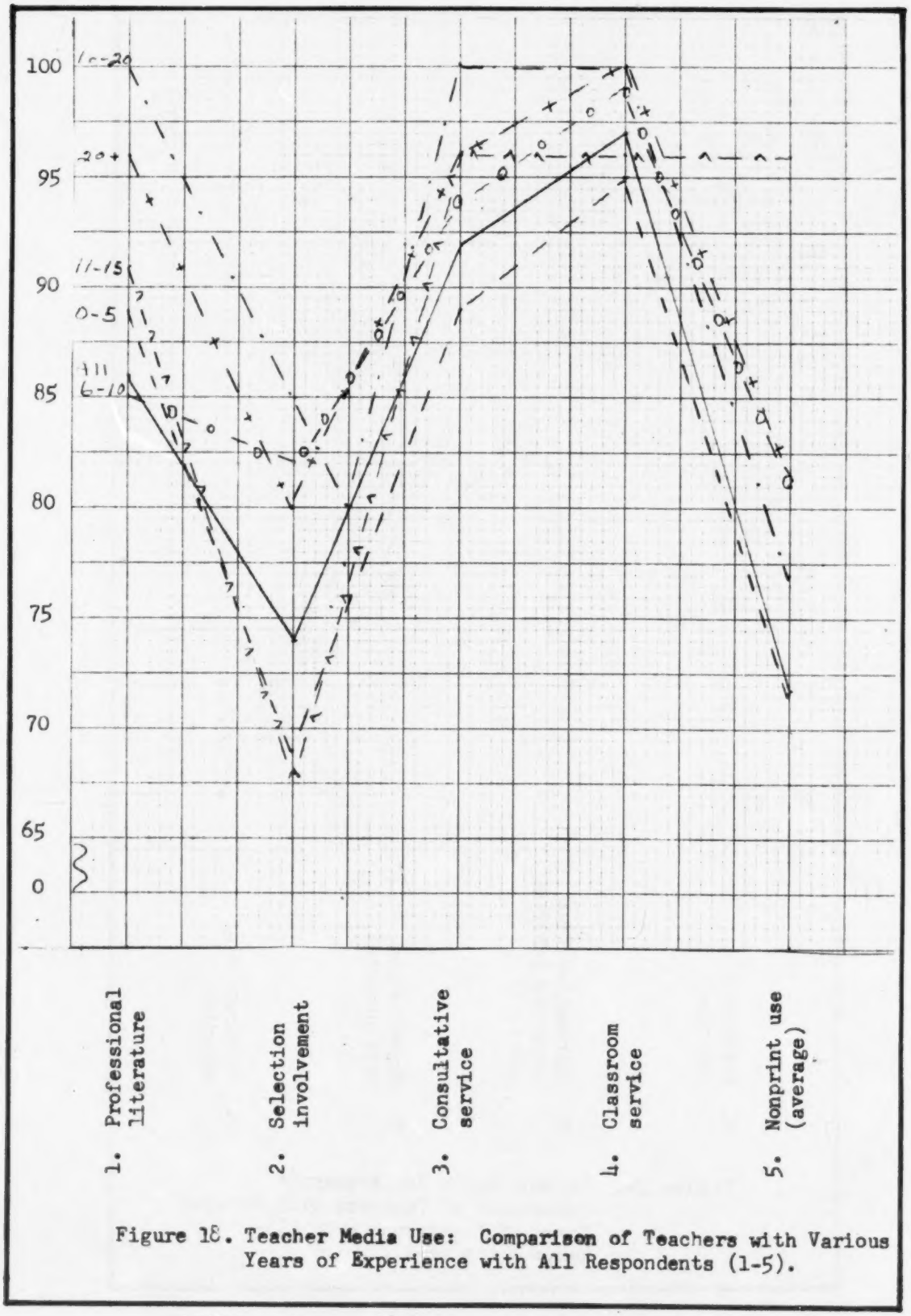

Figure 18. Teacher Media Use: Comparison of Teachers with Various Years of Experience with All Respondents (1-5).

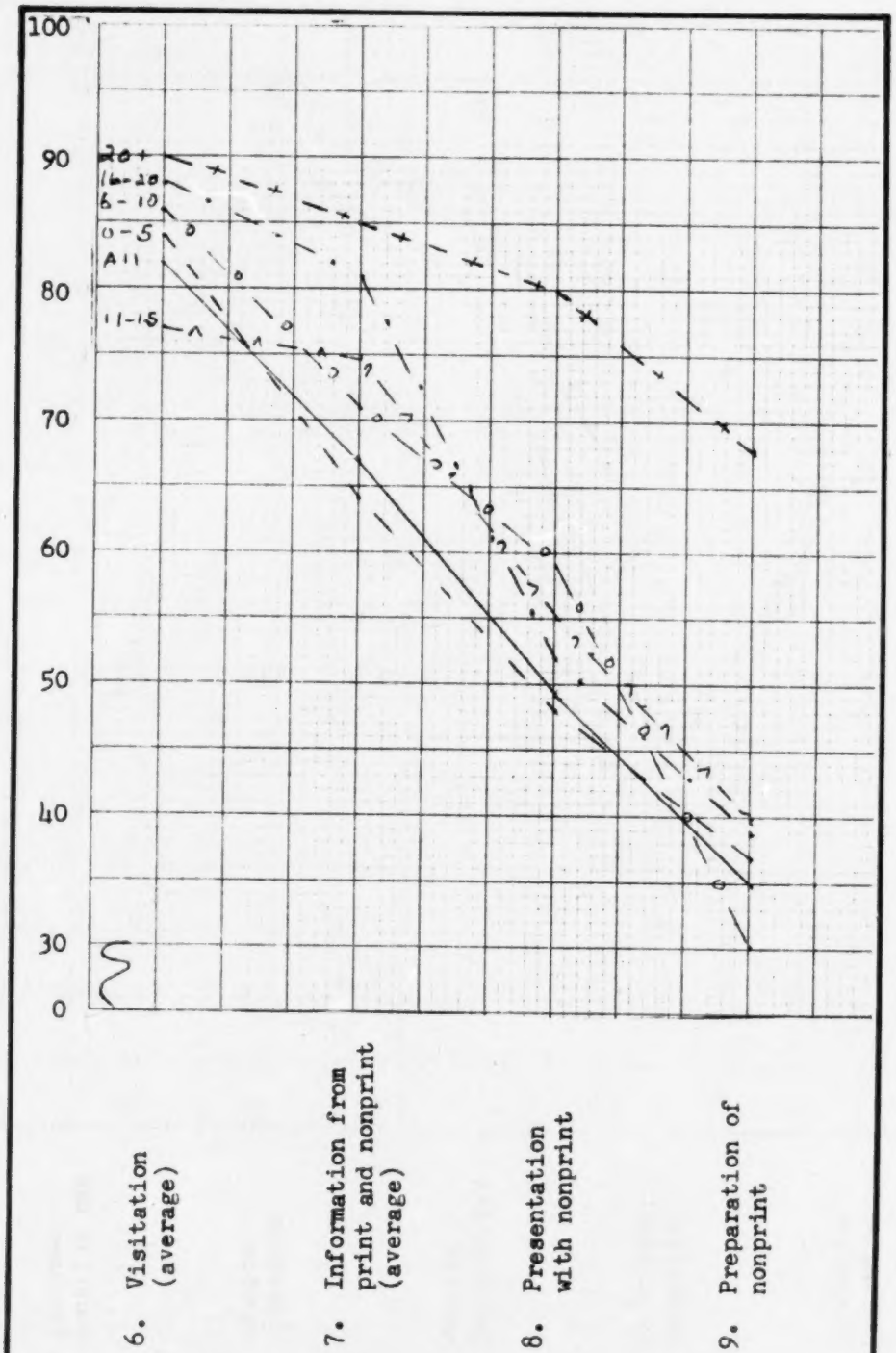

Figure 19. Student Media Use Averaged: Comparison of Teachers with Various Years of Experience with All Respondents (6-9).

Godfrey found that length of teaching experience had little effect on the proportion of users with the exception of veterans of twenty or more years in math, social studies, and languages. (10, 53)

This study finds, however, that there is some relationship between years of teaching experience and teacher and student use of SMC media and services. Generally, media use increases with the teacher's years of professional experience. The data suggest that the teacher may learn media use year by year, on or off the job. While teacher and student media involvement generally increases with the years, participation in selection and use of electronic media remain relatively low for teachers and presentation and preparation remain relatively low for students. These four areas of media involvement may well deserve more attention in formal and informal in-service programs. An overall aim of such programs might well be to facilitate and accelerate the increase of media use already occuring from year to year.

Is there any relationship between grade level (Figure 20) and teacher-student use of SMC resources? Teachers of grades 4-6 surpass the whole sample and all sub-samples by grade in their media use. Kindergarten teachers generally exceed the whole sample, with a slightly smaller average percentage in the presentation category and an impressively low percentage in materials selection. Teachers in grades 1-3 reported percentages of media use below the general sample in

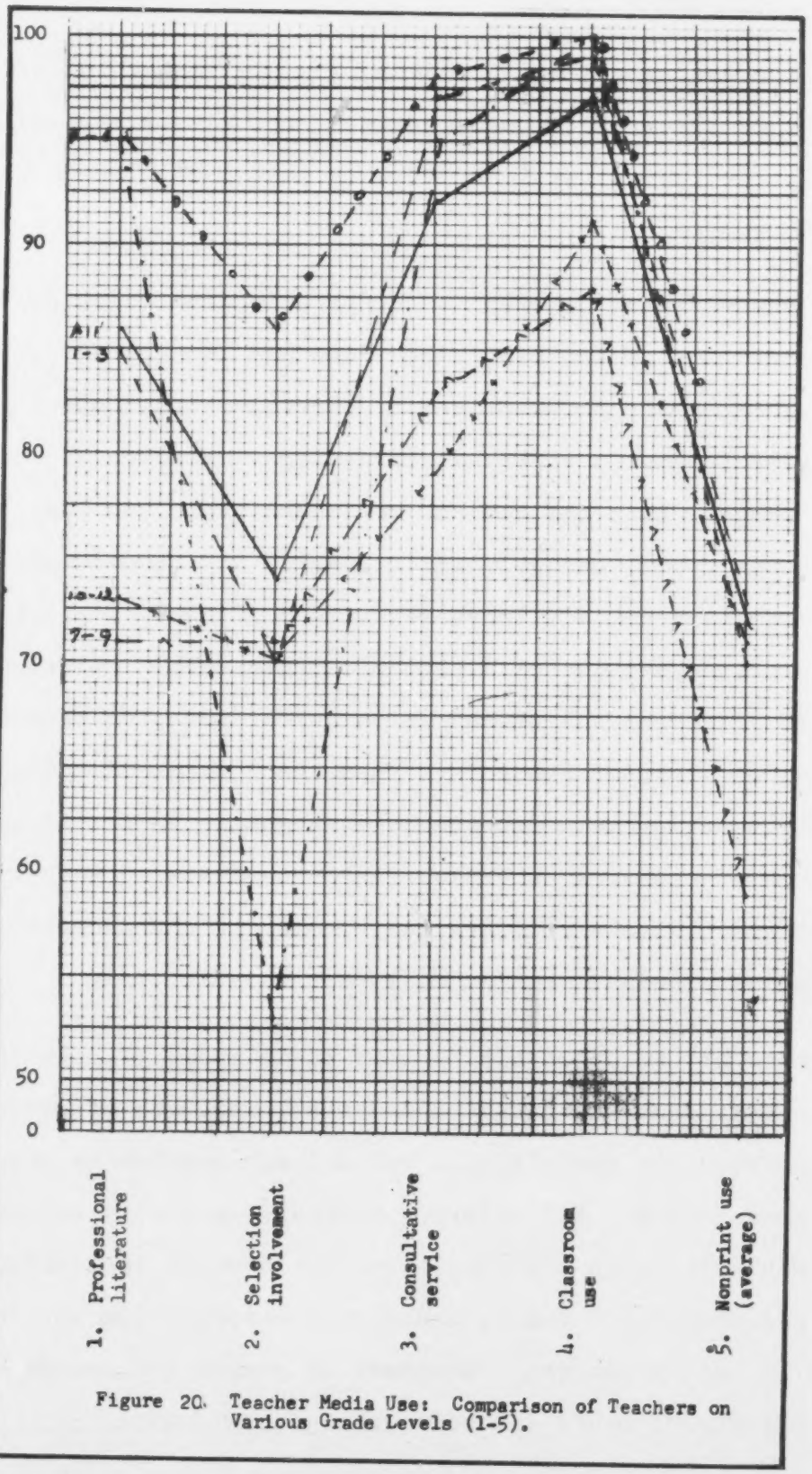

Figure 20. Teacher Media Use: Comparison of Teachers on Various Grade Levels (1-5).

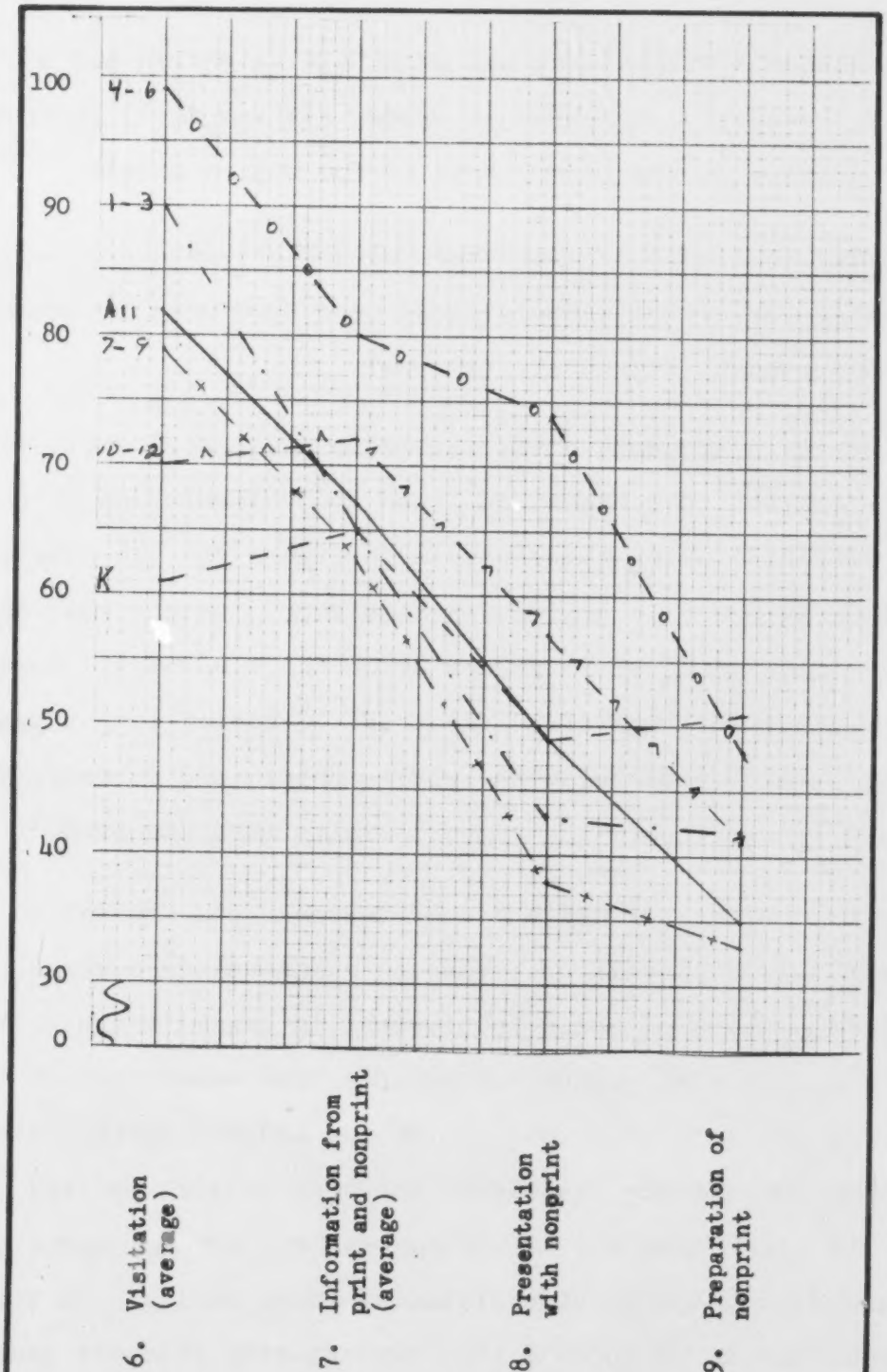

Figure 21. Student Media Use Averaged: Comparison of Various Grade Levels with All Respondents (6-9).

professional literature, and materials selection but above in other respects. Teachers in grades 7-9 and 10-12 indicated percentages of use below those of the entire sample.

Godfrey concluded earlier that "elementary teachers used a greater variety of materials and used them more frequently than secondary teachers. (10, 64)

Students in grades 4-6 display media use consistently superior to that of students on other grade levels and to that of students in the total sample. (Figure 21) To a lesser extent students in grades 1-3 also excel, with a smaller percentage involved in presentation and a notably larger percentage in preparation excepted. Students in 7-9 grades consistently fall below the whole number, and students in 10-12 grades exceed the number, visitations excepted.

The percentages of media use by teachers and student on various grade levels give rise to numerous conjectures. Is the high level of media involvement in grades 4-6 attributable to the fact that youngsters by this time have acquired basic skills to use library media? Or, as Godfrey posits, that grades 4-6 embrace the widest range of subject matter? (10, 74) On the other hand the use of appropriate library media earlier could assist in the acquisition of these skills. In this connection it is notable that kindergarten teachers generally surpass the whole sample and their pupils consistently fall below. Why are these teachers not involved in selection?

Why are their pupils not more widely involved with media? These questions should give school media specialists pause.

Most arresting is the revelation that teachers in grades 7-9 and 10-12 are less involved with media than their counterparts in the elementary school. School media specialists might well assess the appeal and accessibility of the professional collection, seek innovative selection practices to invite teacher participation, and develop ways to integrate consultative services into the educational program. Media specialists could well design in-service programs to encourage media preparation and presentation by teachers and students grades 7-9. Working with their principals, media specialists serving teachers and students grades 7-9 and 10-12 should also review the scheduling of library visits. How surprising to discover that secondary school students, supposedly more capable of self-direction, visit the SMC less widely than elementary students! This despite the many individualized programs reported in education literature and in the popular media.

Is there some relationship between each of the broad subject areas and teacher-student media involvement? Both the teachers in social studies and in language-literature areas surpass the whole sample, each with one exception (Figure 22). Teachers in other teaching areas fall below the general sample consistently, those in the practical arts most spectacularly. Students in the language-literature courses

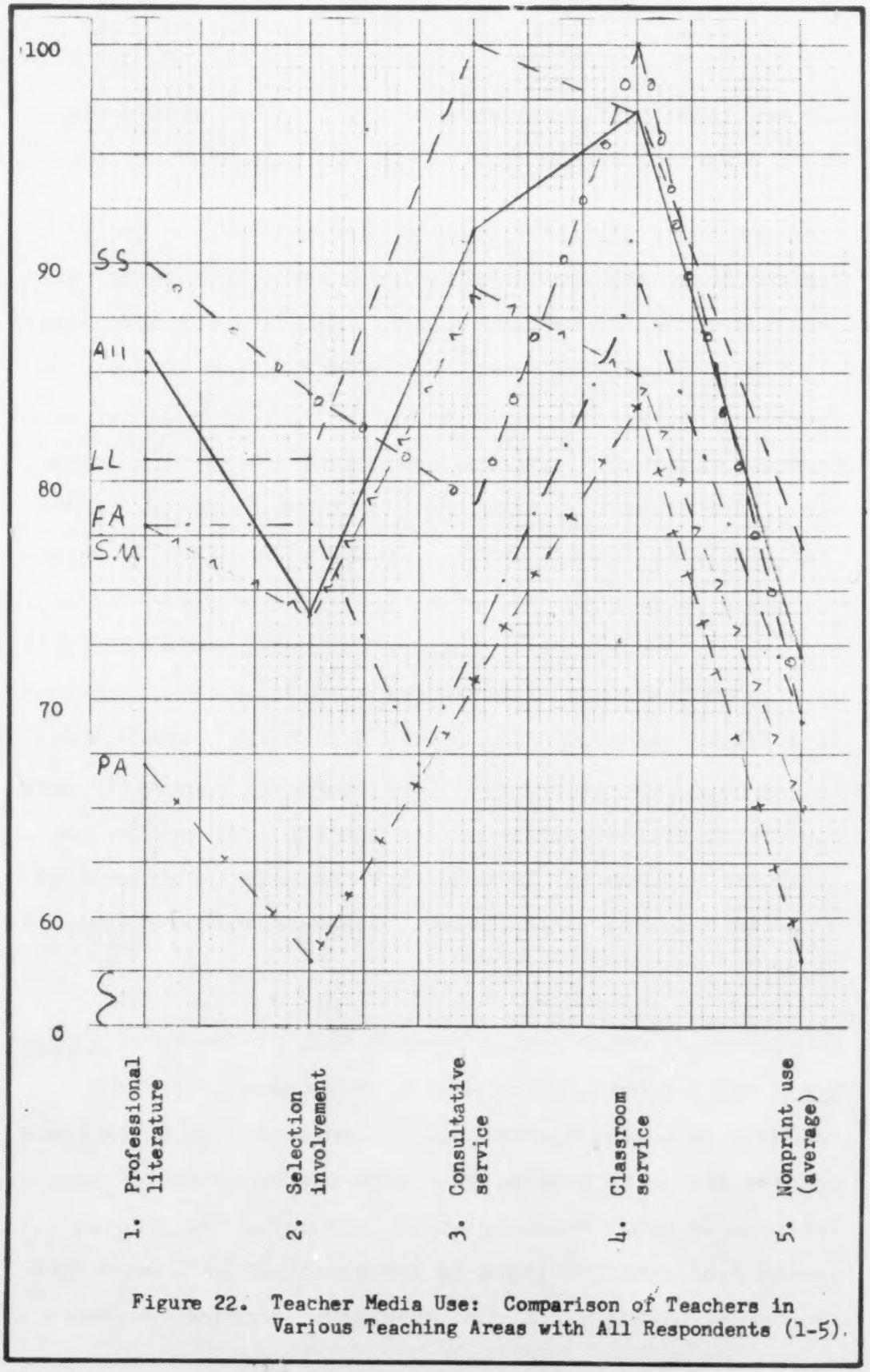

Figure 22. Teacher Media Use: Comparison of Teachers in Various Teaching Areas with All Respondents (1-5).

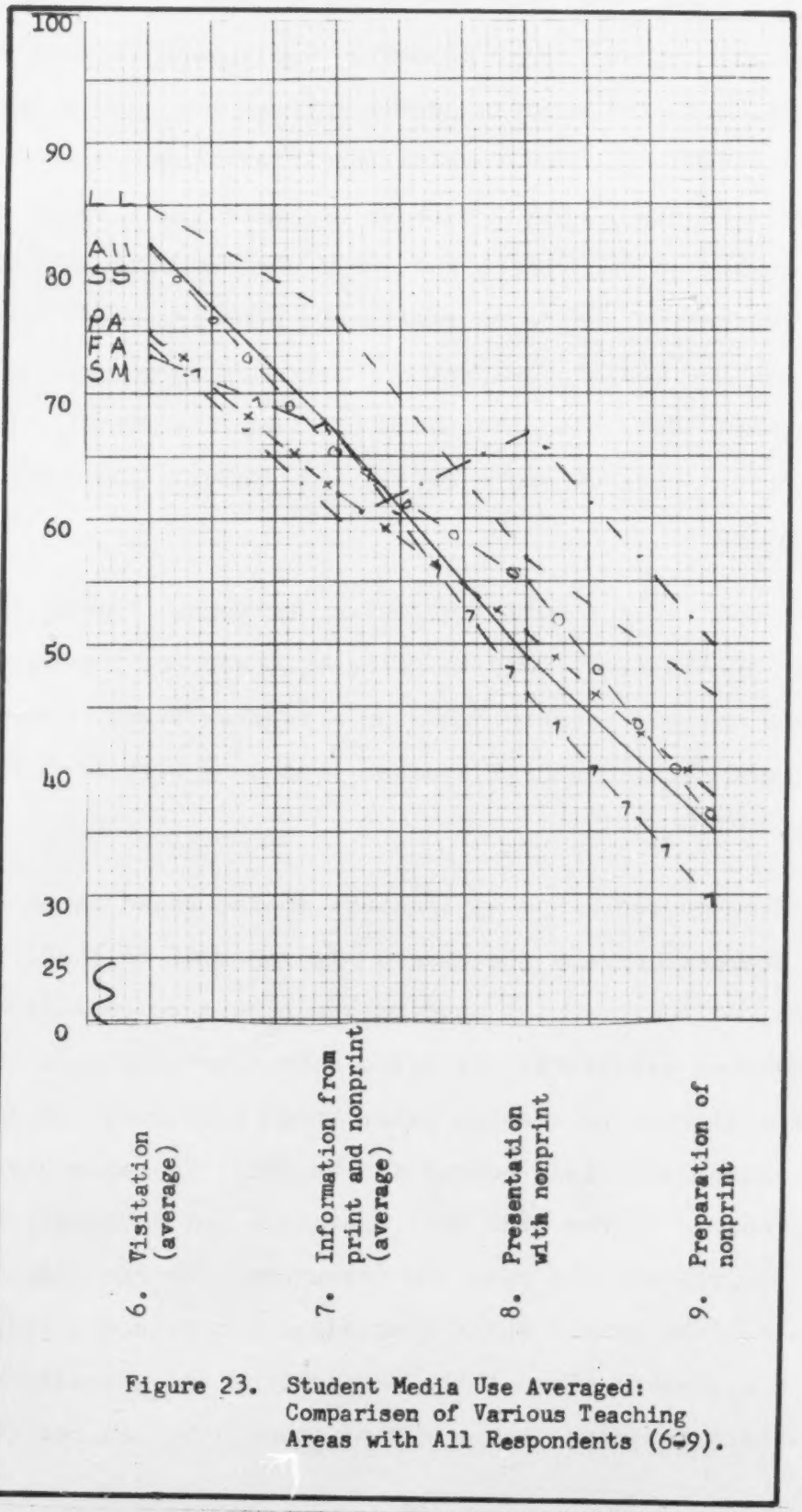

Figure 23. Student Media Use Averaged: Comparisen of Various Teaching Areas with All Respondents (6-9).

display the highest level of media involvement (Figure 23). Students in social studies barely surpass the sample, except for a dip below in use of media for information. Students in fine arts create a unique pattern of media use: below the whole number in SMC visits and media use for information, above the entire sample in electronic nonprint media presentation and media preparation. Students in science and math consistently fall slightly below the complete sample. Students in practical arts exceed slightly only in presentation and preparation.

Earlier Godfrey outlined a different pattern: "Among the subject specialties, only in science, music and foreign language was any material used on a regular basis. Several media were used in social studies, but none with high frequency." (10, 64)

Reflection on media use by teachers in the broad teaching areas prompts certain questions. In contrast to their colleagues, do fewer social studies teachers need consultation on classroom utilization of media? Do fewer teachers in language-literature than in other broad curricular areas need professional materials housed in the SMC? We can ponder also how a teacher in the fine arts can carry out a broadly humanistic program without rich SMC resources. We can speculate too on how the school media specialist can create a responsive media environment without the perceptions and expressions of the artists resident in the school community. As for the

teachers of practical arts, instead of writing them off as skill oriented, the school media specialist might well investigate the extensive use of media in vocational-technical schools and consult recently published special bibliographies for vocational-technical collections.

Media utilization by students in the various teaching areas also evokes questions. Because students in the language arts use media extensively, relatively speaking, can we surmise that they are more extensively engaged in creative inquiry? Students in social studies fall below the whole sample in the percentages using print and nonprint media as information sources. Are these students less extensively engaged in inquiry? Do their SMC collections actually meet their needs or do they depend chiefly on lectures and texts? It is notable that students in both social studies and language-literature exceed the whole sample in percentages visiting the SMC during class periods and that students in the other teaching areas fall below that sample. Significant is the small difference for visitations--only twelve percent. If only 73% to 85% of the students--depending upon the teaching area--visit the SMC during classes, the principal, assisted by the school media specialist, should initiate a critical faculty appraisal of the curriculum. Added emphasis on creative student inquiry facilitated by interaction with diverse media should lead to wider and more frequent student use of the SMC.

Of particular interest are the media presentation and preparation activities of students in the practical and fine arts. Beginning with these, school media specialists could develop wider media use. The problem of enticing science-math teachers and students into more extensive use of library media remains. Educators in the vanguard now envision these disciplines as manifestations of man's humanity to be used for human ends. They would teach broad understandings and appreciations, not just techniques. This trend augurs well for media use by teachers and students in science and mathematics.

Beginning and Experienced Teachers and Their Media Use

Of considerable interest to educators is the comparison of media use by novice and veteran teachers. The beginner relies primarily on the media attitudes, understandings, and skills acquired during his preparation for the teaching profession. Ideally, the experienced teacher, building on his initial foundation, has assembled a rich and varied media repertoire acquired formally and informally in and out of school.

Differences between beginning and experienced teachers are negligible in respect to their use of professional materials, involvement in selection, consultation concerning materials, and classroom use of materials (Figure 24). Disparity is evident between the neophytes and their more practiced fellow teachers in their use of nonprint media in class presentations--

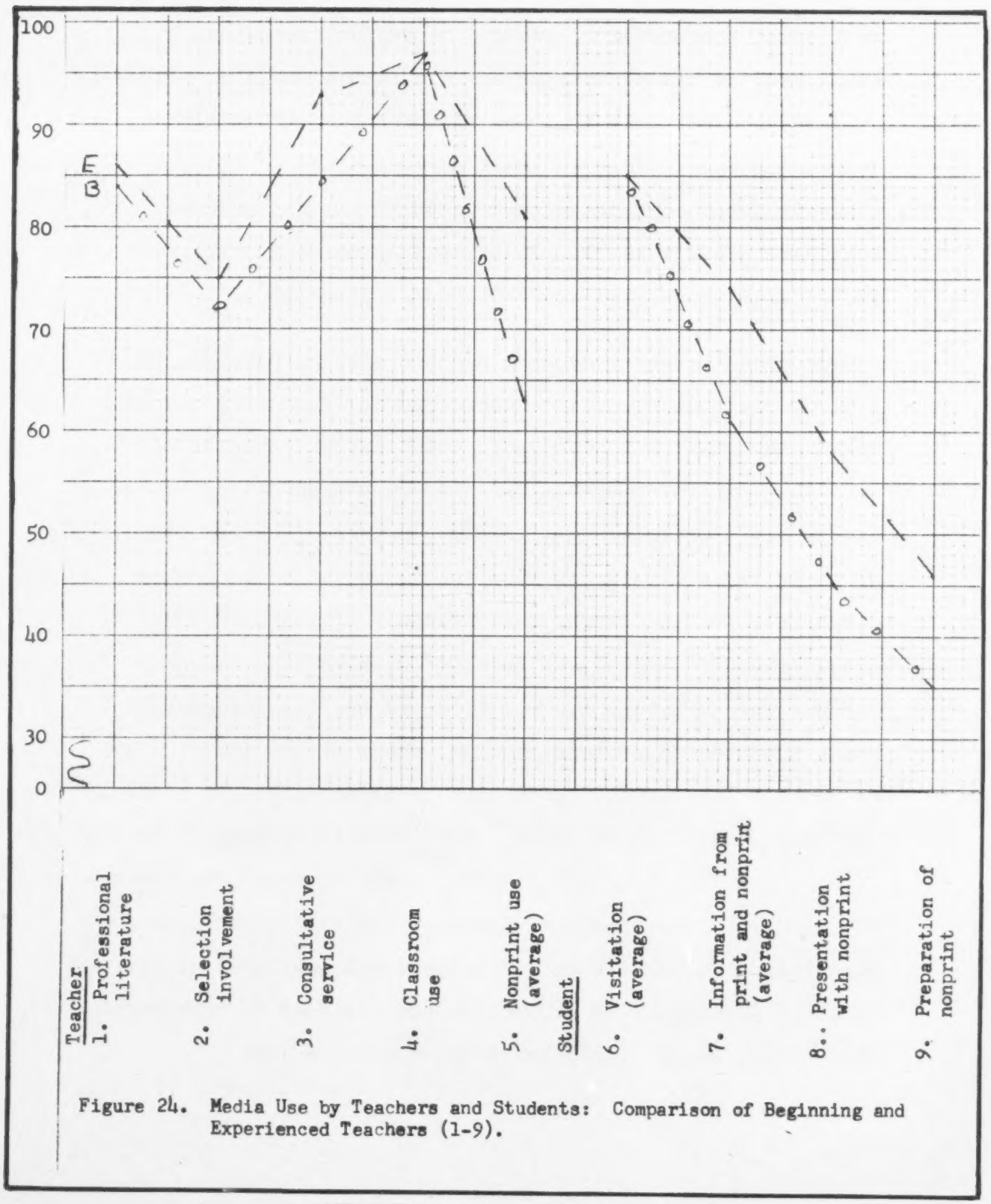

Figure 24. Media Use by Teachers and Students: Comparison of Beginning and Experienced Teachers (1-9).

an overall difference of twenty-one percentage points. Comparison of teacher use of six electronic media in class presentations reveals that new teachers use filmstrips and discs almost as widely as their more seasoned colleagues. Disparity between these groups in their use of overhead transparencies, tape recordings, and opaque and slide projections is impressive--ranging from 14% to 20% (Figure 25).

Their students, nevertheless, exhibit similar patterns of library visitation. In each category of media use, however, the average favors students of veterans over students of novices: for information, 74%/61%; in presentation, 58%/45%; and in media production, 46%/35%. In each of these categories specific items display similar incidence; other show some disparity. In the latter case students of seasoned instructors are consistently more involved with media. Greatest differences in extent of student media use for information are attributed to posters, photos, study prints (18%), 8 mm or Super 8 film (19%), television or radio (23%), loop films (24%), and video tapes (28%). Most notable divergence in student use of electronic nonprint media in presentations are ascribed to transparencies (17%), slides (16%), and opaque projections (16%) (Figure 25). Largest disparities in the realm of student media production are assigned to transparencies (16%), slides (17%) and 8 mm or Super 8 (19%).

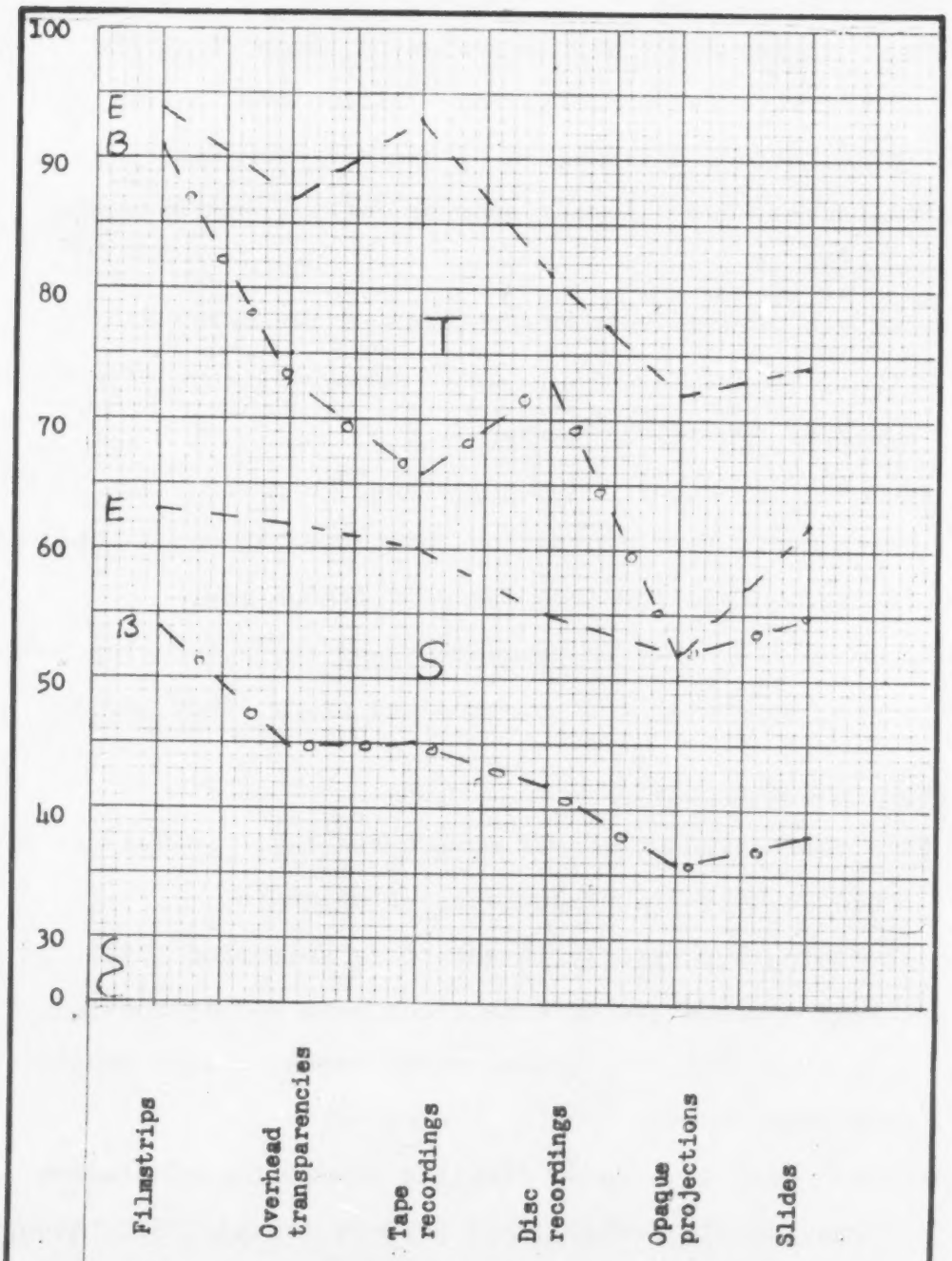

Figure 25. Teacher and Student Media Use of Six Electronic Nonprint Media in Presentations: Comparison of Beginning and Experienced Teacher and Their Respective Students.

Beginning teachers

--compare favorably with experienced teachers in the percentages using professional literature, participating in selection, utilization of media center materials in the classroom, and allowing student library visits during class periods.

--compare favorably in percentages of teachers using electronic nonprint media in class presentations, filmstrips and disc recordings excepted.

--compare favorably, on the average, in percentages of students using media for information and presentation, as well as in the percentage involved in media production.

--compare favorably in percentages of students using some media, unfavorably in percentages using other media.

Experienced teachers

--and their students equal or surpass their colleagues and their students in percentages using media.

--participate partially in materials selection (75%).

--reveal limited use of some electronic media; one-fourth or more never use television, video tapes, opaque projections, or slides.

--reveal less than total flexible scheduling of student library visits during class periods (single, 91%; groups, 80%; class 85%).

--indicate limited student media utilization for information (74%) and class presentations (58%) as well as limited student media production (46%).

It would be a rare beginning teacher who would spring from teacher education into the classroom a full-blown professional. Because teaching is a complex function, expertise usually evolves. Beginners would perform more effectively, however, if they were equipped with basic, well-honed media tools--attitudes, understandings, and skills. Armed with these competencies, they would be ready to facilitate creative student inquiry requiring multimedia for information, production, and presentation. During the teachers' career, in-service programs could present new technologies and innovative approaches. Until teacher-training assumes responsibility for all fundamental media competencies, in-service programs must continue to teach basic media theory and practice as needed by both neophytes and veterans.

VI. SUMMARY AND CONCLUSION

Purpose and procedures

To determine the present status of print and nonprint media use by teachers and students in Kansas schools, this survey questioned 288 elementary and secondary teachers . Seven were beginners and 221 established professionals. These teachers served in forty-five schools with libraries meeting or surpassing the 1960 Standards (2). Their media centers were supervised by district library media coordinators willing to cooperate in this investigation.

"Media Use in Teaching and Learning: a Preliminary Checklist", the measuring devise, includes five items on teacher use of media and four items on student use of media. This checklist requires fifty-two responses, forty-four indicating frequency (almost daily, weekly or bi-weekly, monthly or bi-monthly, during the semester, and never) and eight designating teacher characteristics (library education, audiovisual education, highest degree, years of teaching, teaching level, and teaching area). Data supplied by the respondents was processed by computer, analyzed, and interpreted to yield findings related to all respondents, to the various teacher characteristics, and to beginning teachers.

Conclusions

All respondents and media use-

Eighty-six percent of all respondents use materials from the

SMC professional collection, using them with greatest frequency monthly or bi-monthly (33%).

Seventy-four percent of all respondents are involved in materials selection, with greatest frequency during each semester (42%).

Ninety-two percent of all respondents consult with the school media specialist concerning materials for instructional units, with sixty-nine percent doing so weekly, bi-weekly, or monthly, bi-monthly.

Ninety-seven percent of all teachers surveyed use SMC materials in their classrooms to arouse interest and convey information, most frequently doing so weekly or bi-weekly (39%).

Seventy-two percent, on the average, use the ten listed non-print media in class presentations; ninety percent, on the average, use conventional nonprint media (models, maps, realia), with greatest frequency either daily or weekly, bi-weekly (52%); and seventy percent, on the average, use electronic nonprint media, with greatest frequency either monthly, bi-monthly or during the semester (39%).

Classes visit the SMC most frequently weekly or bi-weekly (65%); small groups also visit most frequently weekly, bi-weekly (35%); and individuals visit most often on a daily basis (36%).

For information students use most widely textbooks (91%), sixty-four percent using them daily; least widely they consult video tapes (31%), eleven percent during the semester.

In class presentations forty-nine percent of the students, on the average, use the six listed electronic media; most extensively they employ filmstrips (57%), using them most often weekly, bi-weekly (11%).

Thirty-five percent of the students, on the average, prepare nonprint materials; eighty-eight percent, however, produce conventional nonprint media, most frequently doing so weekly or bi-weekly (39%).

Teacher characteristics and media use-
Teachers with undergraduate library hours and their students exceed the whole sample consistently; students of teachers with graduate library hours surpass the whole number consistently.

Teachers with graduate audiovisual hours and those with undergraduate hours, as well as the students of both, exceed the entire sample.

Teachers with Master's and Specialist's degrees and their students exceed the whole sample consistently; teachers with Bachelor's degrees fall below the complete sample consistently.

Teachers with 0-5 years in the profession fall short of the whole number without exception.

Teachers with 20+ and with 16-19 years of teaching, as well as their students, exceed the whole number consistently.

Teachers with grades 4-6, without exception, exceed the whole sample; teachers of grades 7-9 and 10-12 fall short of the complete sample.

Students in grades 4-6 surpass the whole sample in each instance; kindergarten students fall short of all respondents.

Teachers in science-math, and practical arts, without exception, fall below the entire sample; students in language-literature consistently exceed the whole sample.

Recommendations

Pre- and in-service programs to educate teachers for media use in teaching and learning so as to increase extent and frequency (also effectiveness) of media utilization. Teacher-education should assume responsibility for basic media competencies; in-service training should offer recent innovative techniques and classroom applications.

Emphasis on cooperative materials selection and the use of electronic nonprint media in formal and informal pre- and in-service teacher education programs.

Emphasis on the media education of teachers in and preparing for grades 7-9 and 10-12, and those in science-math and practical arts.

Education of school media specialists with expertise to provide the consultation and in-service training programs needed by teachers in grades 7-9 and 10-12, and those in science-math and practical arts.

Increased emphasis on creative inquiry, which requires multi-media information sources, multimedia presentations of unique personal expressions, and the preparation of materials to embody and communicate those expressions.

Increased support by principals and media coordinators and specialists for flexible scheduling, i.e., for class time SMC visits by students according to their needs: singly, in small groups, or as classes.

Continued effort to attain the 1969 Standards (1), which serve as guidelines for optimum library resources and programs to support teacher-student inquiry.

Further research

Task analysis to define needed teacher media competencies. Investigations to determine the most effective pre- and in-service teacher-education programs for media use.

Investigations to monitor increased incidence, frequency, and effectiveness of teacher-student media use.

The "Preliminary Checklist" could assist individual teachers, departments, school buildings or school systems to determine their present media practice. Carefully interpreted the

"Checklist" could also serve diagnostic purposes. As a follow-up this device could in addition assess progress. Some users will wish to add other media-programmed materials and paperbacks, for instance. The limitations of the "Checklist" are obvious; responses indicate only extent of use, frequency of use, and non-use of media. Qualitative measures are yet to be developed.

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"We have now become aware of the possibility of arranging the entire human environment as a work of art, as a teaching machine designed to maximize perception and to make everyday learning a process of discovery."

The Medium Is the Massage, Marshall McLuhan and Quentin Fiore

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Project Teacher Education
Kansas Association of School Librarians

MEDIA USE IN TEACHING AND LEARNING:
A PRELIMINARY CHECKLIST

Information: (Circle the number of the appropriate answer.)

1. Library Education Hours: Undergraduate (1) Yes (2) No

   Graduate (1) Yes (2) No

2. Audiovisual courses: Undergraduate (1) Yes (2) No

   Graduate (1) Yes (2) No

3. Highest Degree: (1) Bachelors, (2) Masters, (3) Specialist, (4) Doctors, (5) Doctors +

4. Years of Teaching: (1) 0-5, (2) 6-10, (3) 11-15, (4) 16-20, (5) 20+

5. Present Teaching Level: (1) K, (2) 1-3, (3), 4-6, (4) 7-9, (5) 10-12

6. Teaching Area(s)--Elementary Department (if departmentalized) or Secondary field: (1) Language-Literature, (2) Fine Arts, (3) Social Studies, (4) Science-Mathematics, (5) Practical Arts.

School _____ District _____ _____

Help us help you! The first five items relate to the use of print and nonprint media by the teacher; the second five items relate to the use of print and nonprint media by students. Your responses, interpreted with those of other teachers, will be utilized to facilitate teaching and learning in Kansas schools.

Directions: Indicate frequency of use: (1) Almost Daily, (2) Weekly or Bi-weekly, (3) Monthly or Bi-monthly, (4) During each semester, (5) Never. Check in the column which most nearly describes your practice (1-5) and that of your students (6-10). Please check every item, whether numbered or lettered.

Teacher Use of Print and Nonprint Media	Almost Daily	Weekly or Bi-weekly	Monthly or Bi-monthly	During each Semester	Never	
1. I check out and read professional literature available in the School Media Center.						1
2. I am involved with the school media specialist in the selection of materials for the collection.						2
3. I consult with the school media specialist concerning materials and services related to instructional units.						3
4. I use materials from the School Media Center to arouse interest and convey knowledge in my classroom.						4
5.0 In class presentations I utilize one or more of the nonprint media. I use:						5.0
a. 16mm film						a
b. filmstrips						b
c. slides						c
d. opaque projections						d
e. overhead projections						e
f. tape recordings						f
g. disc recordings						g
h. video-tapes						h
i. televised presentations						i
j. models, maps, realia						j

Student Use of Print and Nonprint Media

	Almost Daily	Weekly or Bi-weekly	Monthly or Bi-monthly	During each Semester	Never	
6.0 During class periods my students visit the School Media Center.						6.0
Students visit:						
a. singly						a
b. in small groups						b
c. as a class						c
7.0 My students seek information in print and nonprint media to answer their problems.						7.0
They use:						
a. textbooks						a
b. magazines and newspapers						b
c. pamphlets						c
d. posters, photos, study prints (any or all)						d
e. 16mm film						e
f. 8mm or Super 8 film						f
g. filmstrips or slides						g
h. loop films						h
i. educational games						i
j. transparencies						j
k. tape recordings						k
l. disc recordings						l
m. video tapes						m
n. televised or radioed material						n
8.0 My students use a variety of nonprint media in class presentations.						8.0
They use:						
a. filmstrips						a
b. slides						b
c. transparencies						c
d. opaque projections						d
e. disc recordings						e
f. tape recordings						f
9.0 My students prepare for their use materials for teaching and learning.						9.0
They prepare:						
a. drawings, paintings, posters, collage, sculpture (any or all)						a
b. transparencies						b
c. slides						c
d. 8mm or Super 8 film						d
e. audio tapes						e
f. video tapes						f